

## MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY.

I.—A CRITICISM OF CURRENT IDEALISTIC THEORIES.<sup>1</sup>

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THE difficulties in the way of an empirical philosophy of science largely arise from the conflict which exists between two parts of a system, the scientific half of which requires us to regard experience as an effect of an external and independent world, while the philosophic or epistemological half offers this same experience to us as the sole groundwork and logical foundation on which any knowledge whatever of an external and independent world may be rationally based. These difficulties and the arguments founded on them require to be urged in the first instance in opposition to those who explicitly hold what I may call the 'naturalistic' creed; and then to that general body of educated opinion, which, though reluctant to contract its beliefs within the narrow circuit of 'naturalism,'

<sup>1</sup> The following article is (as appears plainly from its opening paragraphs) a chapter extracted from an as yet unfinished book, not especially designed for philosophic readers. I am aware that this makes it in some respects unsuitable for such a Journal as MIND. As, however, it puts with great brevity, and with as much clearness as I can command, certain fundamental difficulties which appear to me to attach to the ordinary presentation of the idealistic view, I have thought it not impossible that it might interest some readers of this Review.—A. J. B.

yet habitually assumes that there is presented to us in science a body of opinion, certified by reason, solid, certain, and impregnable, to which theology adds, as an edifying but purely voluntary supplement, a certain number of dogmas, of which the well-disposed assimilate as many, but only as many, as their superior allegiance to "positive" knowledge will permit them to digest.

These two classes, however, by no means exhaust the kinds of opinion with which it is necessary to deal. And in particular there is a metaphysical school, few indeed in numbers but none the less important in matters speculative, whose general position is wholly distinct and independent; who would indeed not perhaps very widely dissent from the negative conclusions already reached,<sup>1</sup> but who have their own positive solution of the problem of the Universe. In their opinion all the embarrassments which may be shown to attend on the empirical philosophy are due to the fact that empirical philosophers wholly misunderstand the essential nature of that experience on which they profess to found their beliefs. The theory of perception evolved by Locke, Berkeley, and Hume, which may be traced without radical modification through their modern successors, is, according to the school of which I speak, at the root of all the mischief. Of this theory they make short work. They press to the utmost the sceptical consequences to which it inevitably leads. They show or profess to show that it renders not only scientific knowledge, but any knowledge whatever, impossible; and they offer as a substitute a theory of experience, very remote indeed from ordinary ways of thinking, and yet more remote from ordinary modes of expression, by which these consequences may in their judgment be entirely avoided.

The dimensions and character of these notes render it impossible, even were I adequately equipped for the task, to deal fully with so formidable a subject as TRANSCENDENTAL IDEALISM, either in its historical or its metaphysical aspect. Remote though it be from ordinary modes of thought, some brief discussion of the theory with which it supplies us concerning Nature and God is however absolutely necessary; and I therefore here present it to the philosophical reader with apologies for brevity, and to the unphilosophic reader with apologies for length.

From what I have already said it is clear that the theory

<sup>1</sup> See footnote, previous page.

to which Transcendental Idealism may be, from our point of view, considered as a reply, is *not* the theory of experience which is taken for granted in ordinary scientific statement, but the closely allied 'psychological theory of perception' evolved by thinkers usually classed rather as philosophers than as men of science. The difference is not wholly immaterial, as will appear in the sequel.

What then is this 'psychological theory of perception'? Or rather where is the weak point in it at which it is open to attack by the transcendental idealists? It lies in the account given by that theory of the *real*. According to this account the 'real' in external experience, that which, because it is not due to any mental manipulation by the percipient, such as abstraction or comparison, may be considered as the *experienced fact*, is, in ultimate analysis, either a sensation or a group of sensations. These sensations and groups of sensations are subjected in the mind to a process of analysis and comparison. Discrimination is made between those which are unlike. Those which have points of resemblance are called by a common name. The sequences and coexistences which obtain among them are noted; the laws by which they are bound together are discovered; and the order in which they may be expected to recur is foreseen and understood.

Now, say the Idealists, if everything of which external reality can be predicated is thus either a sensation or the idea of a sensation, if these and these only are 'given' in experience, everything else, including relations, being mere fictions of the mind, we are reduced to the absurd position of holding that the real is not only unknown but is also unknowable. For a brief examination of the nature of experience is sufficient to prove that an unrelated 'thing,' be that thing a sensation or a group of sensations, which is not qualified by its resemblance to other things, its difference from other things, and its connexion with other things, is really, so far as we are concerned, no "thing" at all. It is not an object of possible experience; its true character must be for ever hid from us: or rather, as character consists simply in relations, it *has* no character, nor can it form part of that intelligible world with which alone we have to deal.

Ideas of relation are therefore required to convert the supposed 'real' of external experience into something of which experience can take note. But such ideas themselves are unintelligible except as the results of the intellectual activity of some 'self' or 'I'. They must be somebody's thought, somebody's ideas; if only for the purpose of mutual

comparison there must be some bond of union between them other than themselves. Here again, therefore, the psychological analysis of experience breaks down, and it becomes plain that just as the real in external experience was real only in virtue of mental facts, ideas of relation (categories), through which it was apprehended; so in internal experience ideas and sensations presuppose the existence of an 'I,' or self-conscious unity, which is neither sensation nor idea, which ought not therefore on the psychological theory to be considered as having any claim to reality at all, but which nevertheless is presupposed in the very possibility of phenomena appearing as elements in a single experience.

We are thus apparently left face to face with a mind (thinking subject) which is the source of relations (categories), and a world which is constituted by relations: with a mind which is conscious of itself, and a world of which that mind may without metaphor be described as the creator. We have in short reached the central position of Transcendental Idealism. But before we proceed to subject the system to any critical observations, let us ask what it is we are supposed to gain by endeavouring thus to *rethink* the universe from so unaccustomed a point of view.

In the first place, then, it is claimed for this theory that it frees us from the scepticism which, in matters scientific as well as in matters theological, follows inevitably upon the psychological doctrine of perception as just explained: a scepticism which not only leaves no room for God and the soul, but destroys the very possibility of framing any general proposition about the 'external' world, by destroying the possibility of there being any world, 'external' or otherwise, in which permanent relation shall exist.

In the second place, it makes Reason no mere accidental excrescence on a universe of material objects; an element to be added to, or subtracted from, the sum of 'things' as the blind shock of unthinking causes may decide. Rather does it make Reason the very essence of all that is or can be: the (immanent) cause of the world process; its origin and its goal.

In the third place, it professes to establish on a firm foundation the moral freedom of self-conscious agents. That 'self' which is the prior condition of there being a natural world cannot be the creature of that world. It stands above and beyond the sphere of causes and effects; it is no mere object among other objects, driven along its predestined course by



external forces in obedience to alien laws. On the contrary, it is a free, autonomous spirit, not only bound, but able, to fulfil the moral commands which are but the expression of its own most essential being.

I am reluctant to suggest objections to any theory which promises results so admirable. Yet I cannot think that all the difficulties with which it is surrounded have been fairly faced, or at any rate fully explained by those who accept its main principles. Consider for example the crucial question of the analysis which reduces all experience to an experience of relations: or in more technical language which constitutes the universe out of categories. We may grant without difficulty that the contrasted theory which proposes to reduce the universe to an unrelated chaos of impressions or sensations is quite untenable. But must we not also grant that in all experience there is a refractory element which, though it cannot be presented in isolation, nevertheless refuses wholly to merge its being in a network of relations, necessary as these may be to give it "significance for us as thinking beings"? If so, whence does this irreducible element arise? The mind, we are told, is the source of relation. What is the source of that which is related? A 'thing-in-itself' which, by impressing the percipient mind, shall furnish the 'matter' for which categories provide the 'form' is a way out of the difficulty (if difficulty there be) which raises more doubts than it solves. The followers of Kant themselves make haste to point out that this hypothetical cause of that which is 'given' in experience cannot, since *ex hypothesi* it lies beyond experience, be known as a cause, or even as existing. Nay, it is not so much unknown and unknowable, as indescribable and unintelligible: not so much a riddle whose meaning is obscure, as mere absence and vacuity of any meaning whatever. Accordingly, from the speculations with which we are here concerned it has been dismissed with ignominy, and it need not therefore detain us further.

But we do not get rid of the difficulty by getting rid of Kant's solution of it. His dictum still seems to me to remain true that 'without matter categories are empty'. And indeed it is hard to see how it is possible to conceive a universe in which relations shall be all in all, but in which nothing is to be permitted for the relations to subsist between. Relations surely imply a something which is related, and if that something is, in the absence of relations, "nothing for us as thinking beings"; so relations in the absence of that something are mere symbols emptied of

their signification; they are, in short, an 'illegitimate abstraction'.

Those moreover who hold that these all-constituting relations are the 'work of the mind,' would seem bound also to hold that this concrete world of ours, down to its minutest detail, should evolve itself *a priori* out of the movement of 'pure thought'. There is no room in it for the 'contingent'; there is no room in it for the 'given'; experience itself would seem to be a superfluity. And we are at a loss therefore to understand why that dialectical process which moves I will not say so convincingly, but at least so smoothly, through the abstract categories of 'being,' 'not-being,' 'becoming' and so forth, should stumble and hesitate when it comes to deal with that world of Nature, which is after all one of the principal subjects about which we desire information. No explanation which I remember to have seen makes it otherwise than strange that we should, as the Idealists claim, be able so thoroughly to identify ourselves with those thoughts of God which are the necessary preliminary to creation, but should so little understand creation itself: that we should out of our unaided mental resources be competent to reproduce the whole ground-plan of the universe, and should yet lose ourselves so hopelessly in the humblest of its ante-rooms.

This difficulty at once requires us to ask on what ground it is alleged that these constitutive relations are the 'work of the mind'. That Kant should say so was natural, and indeed inevitable. He conceived the world of experience to be illumined by the combined action of two invisible opposites, the 'thing-in-itself' on the one side, the 'I' or self (pure ego of apperception) on the other; the 'matter' produced by the action of the first Unknown, in union with the 'form' contributed by the second Unknown, making up the knowable. But, as I have already indicated, the idealist followers of Kant object to this ascription of causal energy to that which is outside the field of possible experience. Causation is a kind of relation (category) which they say is valid within that field but illegitimate and even meaningless without it. Now this may be a good argument enough, but if it be good when we are dealing with the 'thing-in-itself' it must surely be also good when we are dealing with the 'pure ego of apperception'; if it is conclusive against the claims of the first to produce the 'matter' of thought, it must be conclusive also against the claims of the second to produce its 'forms'.

It is true no doubt that ordinary usage would describe as

mental products the more abstract thoughts (categories), such for example as 'being,' 'not-being,' 'causation,' 'reciprocity,' &c. But it must be recollected in the first place that Transcendental Idealism does not as a rule derive its inspiration from ordinary usage; and in the second place, that even ordinary usage alters its procedure when it comes to such more concrete cases of relation as, for instance, 'shape' and 'position,' which rightly or wrongly are always considered as belonging to the 'external' world, and presented by the external world to thought, not created by thought for itself.

Are the Transcendental Idealists then bound by their own most essential principles, in opposition both to their arguments against Kant's 'thing-in-itself' and to the ordinary beliefs of mankind, to invest the thinking 'self' with this attribute of causal or *quasi*-causal activity? It certainly appears to me that they are *not*. Starting it will be recollected from the analysis (criticism) of experience, they arrived at the conclusion that the world of objects exists and has a meaning only for the self-conscious 'I' (subject), and that the self-conscious 'I' only knows itself in contrast and in opposition to the world of objects. Each is necessary to the other; in the absence of the other neither has any significance. How then can we venture to say of one that the other is its product? and if we say it of either must we not in consistency insist on saying it of both? Thus, though the presence of a self-conscious principle may be necessary to constitute the universe, it cannot be considered as the creator of that universe: or if it be, then must we acknowledge that precisely in the same way and precisely to the same extent is the universe the creator of the self-conscious principle.

All therefore that the Transcendental argument requires, or even allows us to accept, is a 'manifold' of relations and a bare self-conscious principle of unity by which that manifold becomes inter-connected in the field of a single experience. We are not permitted except by a process of abstraction, which is purely temporary and provisional, to consider the 'manifold' apart from the 'unity,' nor the 'unity' apart from the 'manifold'. The thoughts do not make the thinker, nor the thinker the thoughts: but together they constitute that whole or Absolute, whose elements, as they are mere no-sense apart from one another, cannot in strictness be even said to contribute separately towards the total result.

Now let us consider what bearing this conclusion has upon (1) Theology, (2) Ethics, and (3) Science.

(1) As regards Theology, it might be supposed that at least Idealism provided us with a universe which, if not created or controlled by reason (creation and control implying causal action), may yet properly be said to be throughout infused by reason and to be in necessary harmony with it. But on a closer examination difficulties arise which somewhat mar this satisfactory conclusion. In the first place, if theology is to provide us with a groundwork for religion the God of whom it speaks must be something more than the bare 'principle of unity' required to give coherence to the multiplicity of Nature. Apart from Nature He is, on the theory we are considering, a mere metaphysical abstraction, the geometrical point through which pass all the threads which make up the web of possible experience: no fitting object surely of either love, reverence, or devotion. In combination with Nature He is no doubt 'the principle of unity,' and all the fulness of concrete reality besides: but every quality with which He is thus associated belongs to that portion of the Absolute Whole from which, by hypothesis, He distinguishes Himself; and, were it otherwise, we cannot find in these qualities, compacted as they are of good and bad, of noble and base, the Perfect Goodness without which religious feelings can never find an adequate object. Thus neither the combining Principle alone, nor the combining Principle considered in its union with the multiplicity which it combines, can satisfy the requirements of an effectual Theology. Not the first, because it is a barren abstraction; not the second, because in its all-inclusive universality it holds in suspension, without preference and without repulsion, every element alike of the knowable world. Of these none, whatever be its nature, be it good or bad, base or noble, can be considered as alien to the Absolute: all are necessary, and all are characteristic.

Of these two alternatives I understand that it is the first which is usually adopted by the school of thought with whom we are at present concerned. It may therefore be desirable to reiterate that a 'unifying principle' can, as such, have no qualities, moral or otherwise. Lovingness, for example, and equity are attributes which, like all attributes, belong not to the unifying principle, but to the world of objects which it constitutes. They are conceptions which belong to the realm of empirical psychology. Nor can I see any method by which they are to be hitched on to the 'Pure Spiritual Subject' as elements making up its essential character.

(2) But if this be so, what is the ethical value of that freedom which is attributed by the Idealistic theory to the self-conscious 'I'? It is true that this 'I' as conceived by Idealism is above all the 'categories,' including of course the category of causation. It is not in space nor in time. It is subject neither to mutation nor decay. The stress of material forces touches it not, nor is it in any servitude to chance or circumstance, to inherited tendencies or acquired habits. But all these immunities and privileges it possesses in virtue of its being *not* an agent in a world of concrete fact, but a thinking 'subject' for whom alone, as it is alleged, such a world exists. Its freedom is metaphysical not moral; for moral freedom can only have a meaning at all in reference to a being who acts and who wills: and is only of real importance for us in relation to a being who not only acts but is acted on, who not only wills but who wills against the opposing influences of temptation. Such freedom cannot, it is plain, be predicted of a mere 'subject,' nor is the freedom proper to a 'subject' of any worth to man as 'object,' to man as known in experience, to man fighting his way with varying fortunes against the stream of adverse circumstances, in a world made up of causes and effects.<sup>1</sup>

<sup>1</sup> This proposition would probably not be widely dissented from by some of the ethical writers of the Idealist School. The freedom which they postulate is not the freedom merely of the pure self-conscious subject. On the contrary, it is the individual, with all his qualities, passions and emotions, who in their view possesses free will. But the ethical value of the freedom thus attributed to self-conscious agents seems on further examination to disappear. Mankind it seems are on this theory free, but their freedom does not exclude determinism, *but only that form of determinism which consists in external constraint*. Their actions are upon this view strictly prescribed by their antecedents, but these antecedents are nothing other than the characters of the agents themselves.

Now it may seem at first sight plausible to describe that man as free whose behaviour is due to 'himself' alone. But without quarrelling over words, it is I think plain that whether it be proper to call him free or not, he at least lacks freedom in the sense in which freedom is necessary in order to constitute responsibility. It is impossible to say of him that he 'ought' and therefore he 'can'. For at any given moment of his life his next action is by hypothesis strictly determined. This is also true of every previous moment until we get back to that point in his life's history at which he cannot in any intelligible sense of the term be said to have a character at all. Antecedently to this the causes which have produced him are in no special sense connected with his individuality, but form part of the general complex of phenomena which make up the world. It is evident therefore that every act which he performs may be traced to pre-natal and possibly to purely material antecedents, and that even if it be true that what he does is the

These observations bring into sufficiently clear relief the difficulty which exists on the Idealistic theory in bringing together into any sort of intelligible association the 'I' as supreme principle of unity, and the 'I' of empirical Psychology, which has desires and fears, pleasures and pains, faculties and sensibilities; which *was not* a little time since, and which a little time hence will be no more. The 'I' as principle of unity is outside time: it can have therefore no history. The 'I' of experience, which learns and forgets, which suffers and which enjoys, unquestionably has a history. What is the relation between the two? We seem equally precluded from saying that they are the same and from saying that they are different. We cannot say that they are the same because they are after all divided by the whole chasm which distinguishes 'subject' from 'object'. We cannot say they are different because our feelings and our desires seem a not less interesting and important part of ourselves than a mere unifying principle whose functions after all are of a purely metaphysical character. We cannot say they are 'two aspects of the same thing' because there is no virtue in this useful phrase which shall empower it on the one hand to ear-mark a fragment of the world of objects and say of it 'this is I'; or on the other to take the 'pure subject,' by which the world of objects is constituted, and say of it that it shall be itself an object in that world, from which its essential nature requires it to be self-distinguished.

But as it thus seems difficult or impossible intelligibly to unite into a personal whole the 'pure' and the 'empirical' self, so it is difficult or impossible to conceive the relations between the pure, though limited, self-consciousness which is 'I,' and the universal and eternal self-consciousness which is God. The first has been described as a 'mode' or 'manifestation' of the second. But are we not in using such language falling into the kind of error against which, in other connexions, the idealists are most careful to warn us: are we not importing a category which has its meaning and its use in the world of objects, into a transcendental region where it really has neither meaning nor use at all? Grant, however, for the sake of argument, that it has a

outcome of his character, his character itself is the outcome of causes over which he has not, and cannot by any possibility have, the smallest control. Such a theory destroys responsibility, and leaves our actions the inevitable outcome of external conditions not less completely than any doctrine of controlling fate, whether materialistic or theological.

meaning; grant that we may legitimately describe one 'pure subject' as a 'mode' or 'manifestation' of another—how is this partial identity to be established? How can we, who start from the basis of our own limited self-consciousness, rise to the knowledge of that completed and divine self-consciousness of which according to the theory we share the essential nature?

The difficulty is evaded but not solved in those statements of the Idealist theory which always speak of Thought without specifying *whose* thought. It seems to be thus assumed that the thought is God's, and that in rethinking it we share His being. But no such assumption would seem to be justifiable. For the basis, we know, of the whole theory is a 'criticism' or analysis of the essential elements of experience. But the criticism must, for each of us, be necessarily of *his own* experience, for of no other experience can he know anything except indirectly and by way of inference from his own. What then is this criticism supposed to establish (say) for me? Is it that experience depends upon the unification by a self-conscious 'I' of a world constituted by relations? In strictness, No. It can only establish that *my* experience depends upon a unification by *my* self-conscious 'I' of a world of relations present to *me*, and to me alone. To this 'I,' to this particular 'self-conscious subject,' all other 'I's,' including God, must be objects, constituted like all objects by relations, rendered possible or significant only by their unification in the 'content of a single experience'—namely, my own. In other words, that which (if it exists at all) is essentially 'subject' can only be known or thought of or spoken about as 'object'. Surely a very paradoxical conclusion.

It may perhaps be said by way of reply that in talking of particular 'I's,' and particular experiences, we are using language properly applicable only to the 'self' dealt with by the empirical psychologist, the 'self' which is not the 'subject' but the 'object' of experience. I will not dispute about terms: and the relations which exist between the 'pure ego' and the empirical 'ego' are, as I have already said, so obscure that it is not always easy to employ a perfectly accurate terminology in endeavouring to deal with them. Yet this much would seem to be certain. If the words 'self,' 'ego,' 'I,' are to be used intelligibly at all they must mean, whatever else they do or do not mean, a 'somewhat' which is self-distinguished not only from every other knowable object but also from every other possible self.



What we are 'in ourselves,' apart from the flux of thoughts and feelings which move in never-ending pageant through the chambers of consciousness, metaphysicians have indeed found it hard to say. Some of them have said we are nothing. But if this conclusion be, as I think it is, conformable neither to our instinctive beliefs nor to a sound psychology; if we are, as I believe, more than a mere series of occurrences, yet it seems equally certain that the very notion of personality excludes the idea of any one person being a 'mode' or 'manifestation' of any other, and forces us to reject from philosophy a supposition which, if it be tolerable at all, can find a place only in mysticism.

But the idealistic theory pressed to its furthest conclusions requires of us to reject, as it appears to me, even more than this. We are not only precluded by it from identifying ourselves even partially with the Eternal Consciousness; we are also precluded from supposing that either the eternal consciousness or any other consciousness exists save only our own. For, as I have already said, the eternal consciousness, if it is to be known, can only be known on the same conditions as any other object of knowledge. It must be constituted by relations: it must form part of the 'content of experience' of the knower: it must exist as part of the 'multiplicity' reduced to 'unity' by his self-consciousness. But to say that it can only be known on these terms is to say that it cannot be known as it exists; for if it exists at all it exists by hypothesis as Eternal Subject, and as such it clearly is not constituted by relations, nor is it either a possible object of experience, or anything for us as thinking beings.

No consciousness, then, is a possible object of knowledge for any other consciousness; a statement which on the Idealistic theory of knowledge is equivalent to saying that for any one consciousness all other consciousnesses are less than non-existent. For as that which is 'critically' shown to be an inevitable element in experience has thereby conferred on it the highest possible degree of reality, so that which cannot on any terms become an element in experience falls in the scale of reality far below mere not-being, and is reduced, as we have seen, to mere meaningless no-sense. By this kind of reasoning the Idealists themselves demonstrate the 'I' to be necessary; the unrelated object and the thing-in-itself to be impossible. Not less by this kind of reasoning must each one of us severally be driven to the conclusion that in the infinite variety of the

universe there is room for but one knowing subject and that this subject is 'himself'.<sup>1</sup>

(3) That the Transcendental 'solipsism' which is the natural outcome of such speculations is not less inconsistent with science, morality, and common-sense, than the psychological, or Berkeleyan<sup>2</sup> form of the same creed, is obvious. But without attempting further to press idealism to results which, whether legitimate or not, all idealists would agree in repudiating, let me in conclusion point out how little assistance this theory is able under any circumstances to afford us in solving important problems connected with the Philosophy of Science.

The psychology of Hume, as we have seen, threw doubt upon the very possibility of legitimately framing general propositions about the world of objects. The observation of isolated and unrelated impressions of sense, which is in effect what experience became reduced to under his process of analysis, may generate habits of expectation but never can justify rational beliefs. The law of universal causation, for example, can never be proved by a mere repeti-

<sup>1</sup> Prof. Caird, in his most interesting and suggestive lecture on the Evolution of Religion, puts forward a theory essentially different from the one I have just been dealing with. In his view a multiplicity of objects apprehended by a single self-conscious subject does not suffice to constitute an intelligible universe. The world of objects and the perceiving mind are themselves opposites which require a higher unity to hold them together. This higher unity is God; so that by the simplest of metaphysical demonstrations Prof. Caird lays deep the foundations of his theology, and proves not only that God exists, but that His Being is philosophically involved in "the very simplest of our experiences."

I confess with regret that this reasoning appears to me inconclusive. Surely we must think of God as, on the transcendental theory, we think of ourselves; that is as a Subject distinguishing itself from, but giving unity to a world of phenomena. But if such a Subject and such a world cannot be conceived without also postulating some higher unity in which their differences shall vanish and be dissolved, then God Himself would require some yet higher deity to explain His existence. If, in short, a multiplicity of phenomena presented to and apprehended by a conscious 'I' form together an intelligible and self-sufficient whole, then it is hard to see by what logic we are to get beyond the solipsism which, as I have urged in the text, seems to be the necessary outcome of one form at least of the transcendental argument. If, on the other hand, subject and object cannot form such an intelligible and self-sufficient whole, then it seems impossible to imagine what is the nature of that Infinite One in which the multiplicity of things and persons find their ultimate unity. Of such a God we can have no knowledge, nor can we say that we are formed in His image, or share His essence.

<sup>2</sup> Of course I do not mean to suggest that Berkeley was a 'solipsist'. On the scientific bearing of psychological idealism see *Philosophic Doubt*, chap. ix.

tion, however prolonged, of similar sequences, though the repetition may, through the association of ideas, gradually compel us to expect the second term of the sequence whenever the first term comes within the field of our observation. So far Hume as interpreted by the Transcendental Idealists.

Now how is this difficulty met on the Idealistic theory? Somewhat in this way. These categories or general principles of relation have not, say the Idealists, to be collected (so to speak) from individual and separate experiences (as the empirical philosophers believe, but as Hume, the chief among empiricists, showed to be impossible); neither are they, as the *a priori* philosophers supposed, part of the original furniture of the observing mind, intended by Providence to be applied as occasion arises to the world of experience with which by a beneficent, if unexplained, adaptation they find themselves in a pre-established harmony. On the contrary, they are the 'necessary *prius*,' the antecedent condition, of there being any experience at all; so that the difficulty of subsequently extracting them from experience does not arise. The world of phenomena is in truth their creation; so that the conformity between the two need not be any subject of surprise. Thus at one and the same time does Idealism vindicate experience and set the scepticism of the empiricist at rest.

I doubt, however, whether this solution of the problem will really stand the test of examination. Assuming for the sake of argument that the world is constituted by 'categories,' the old difficulty arises in a new shape when we ask on what principle those categories are in any given case to be applied. For they are admittedly not of universal application, and, as the Idealists themselves are careful to remind us, there is no more fertile source of error than the importation of them into a sphere wherein they have no legitimate business. Take, for example, the category of causation, from a scientific point of view the most important of all. By what right does the existence of this 'principle of relation' enable us to assert that throughout the whole world every event must have a cause and every cause must be invariably succeeded by the same event? Because we *can* apply the category, are we therefore *bound* to apply it? Does any absurdity or contradiction ensue from our supposing that the order of Nature is arbitrary and casual, and that, repeat the antecedent with what accuracy we may, there is no security that the accustomed consequent will follow? I must confess that I can perceive none. Of course one

'principle of unification' would thus be found inapplicable: but this would by no means result in the universe resolving itself into that unthinkable chaos of unrelated atoms which is the idealist bugbear. There are plenty of categories left; and if the final aim of philosophy be indeed to find the Many in One and the One in Many, this end would be as completely, if not as satisfactorily, accomplished by conceiving the world to be presented to the thinking 'subject' in the haphazard multiplicity of unordered succession, as by any more elaborate method. Its various elements lying side by side in one Space and one Time would still be related together in the content of a single experience, they would still form an intelligible whole, their unification would thus be effectually accomplished without the aid of the higher categories. But it is evident that a universe so constituted, though it might not be inconsistent with philosophy, could never be interpreted by Science.

As we saw in the earlier portion of this chapter, it is not very easy to understand why, if the universe be constituted by relations and relations are the work of the mind, the mind should be dependent on experience for finding out anything about this universe. But granting the necessity of experience, it seems as hard to make it answer our questions on the Idealist as on the Empirical hypothesis. Neither on the one theory nor on the other does any method exist for extracting general truths out of particular observations, unless *some* general truths are first assumed. On the Empirical hypothesis there are no such general truths. Pure empiricism has therefore no claim to be a philosophy. On the Idealist hypothesis there appears to be only one general truth applicable to the whole intelligible world—a world which, be it recollected, includes everything in respect to which language can be significantly used; a world which therefore includes the negative as well as the positive, the false as well as the true, the imaginary as well as the real, the impossible as well as the possible. This single all-embracing truth is that the multiplicity of phenomena, whatever be its nature, must always be united, and only exists in virtue of being united, in the experience of a single self-conscious subject. But this general proposition, whatever be its value, cannot, I conceive, effectually guide us in the application of subordinate categories. It supplies us with no method for applying one principle rather than another within the field of experience. It cannot give us information as to what portion of that field, if any, is subject to the law of causation: nor tell us which of our perceptions,

if any, may be taken as evidence of the existence of a permanent world of objects such as is implied in all scientific doctrine. Though therefore the old questions come upon us in a new form, clothed, I will not say shrouded, in a new terminology, they come upon us with all the old insistence. They are restated but they are not solved: and I am unable therefore to find in Idealism any escape from the difficulties which, in the region of Theology, Ethics, and Science, empiricism leaves upon our hands.<sup>1</sup>

<sup>1</sup> I have made in this chapter no reference to the Idealistic theory of *Æsthetics*. Holding the views I have indicated upon the general import of Idealism, such a course seemed unnecessary. But I cannot help thinking that even those who find in that theory a more satisfactory basis for their convictions than I am able to do, must feel that there is something rather forced and arbitrary in the attempts that have been made to exhibit the artistic fancies of an insignificant fraction of the human race during a very brief period of its history as essential and important elements in the development and manifestation of the 'Idea'.

## II.—ON THE NATURE OF LOGICAL JUDGMENT.<sup>1</sup>

By E. E. C. JONES.

IF one takes such a statement as *The red octavo volume on the chess-table is bound in Russia leather*, and inquires what is the thought, the 'mental equivalent,' that would normally correspond to it and that is naturally expressed by it, the answer I should be disposed to give would be somewhat as follows:—I see, or merely think of, an object having the characteristics of being a red book on the chess-table, octavo in size, bound in Russia leather. In order to indicate or point out this object I speak of it as *the red octavo volume on the chess-table*. In order to emphasise the remaining characteristic, as a characteristic of this indicated object, I both isolate it and refer it to the object by making *bound in Russia leather* a Predicate of *the red octavo &c. volume*. I make an explicit analysis in synthesis. The analysis is indicated by the separation of terms, the synthesis by the affirmative copula. The copula indicates the synthesis by signifying that S (*The red &c. volume*) and P (*bound in Russia leather*) have an identical application, refer to the very same object. Both Subject and Predicate have Application, *i.e.*, they are names of something (whether *Attribute of a Subject*, or, as here, *Subject of Attributes*), and both have Signification, *i.e.*, they imply Characteristics. Unless both Terms had Application (and identical Application) the copula would be futile, could not perform its function, unless both had Signification<sup>2</sup> (and diverse Signification) the separation of Terms would be unmeaning, there would be no analysis but only bare and meaningless repetition. At the same time, the two aspects are differently emphasised in the two Terms; in the Subject it is the Application-aspect that is prominent, and the Subject (in affirmatives) *fixes* the Application of the Predicate. In the sentence under discussion, *e.g.*, the Application of *bound in Russia leather*, is fixed and limited by the Application of the Subject; the Application of *bound in Russia leather*, in this proposition, is to *the octavo volume* pointed out by the Subject, and to that only.

<sup>1</sup> I should perhaps remark that in what follows I am only attempting to deal with what are commonly called Categorical Judgments.

<sup>2</sup> I use *Signification* to cover both *Connotation* and *Intension* in Dr. Keynes's sense. Cf. his *Formal Logic*, p. 27, 2nd edition.

There may be plenty of *other* objects bound in Russia leather, but it is not to any of *them* that the Predicate of *this* Proposition applies. In the Predicate, on the other hand, it is the *Signification* that is prominent, the Application (as we have already seen) has been fixed once for all by the Subject, there can be no further question about that. It remains, then, that it is for the sake of its Signification that the Predicate is there—to emphasise the characteristics which are by it asserted of the Subject, is its very *raison d'être*.<sup>1</sup>

If we look at the difference that would result from an alteration in the relative position of the names used in this proposition, as, *e.g.* :—

The red octavo volume bound in Russia leather is on the chess-table;

or,

The red Russia-leather volume on the chess-table is octavo,

it appears to me that the analysis just given receives strong confirmation. It is in each case clear that the Signification-emphasis naturally falls upon the Predicate—that there is a *comparative* elimination of stress, upon Signification in the Subject and Application in the Predicate. And this is made even clearer by considering that the three different statements given would be regarded as respectively appropriate to different contexts; *e.g.*, in response to the request to be shown a book bound in Russia leather, or a volume in octavo, or in reply to the question, Where is the red octavo volume bound in Russia leather?<sup>2</sup>

Every object of sense-perception (and when we come to think of it, every object of thought) has a great multiplicity of characteristics (taking *characteristic* in the widest sense), but attention cannot in any case be focussed upon all of them at once;—“the narrowness of consciousness” is not only a conception of scientific Psychologists but (to most of us) a matter of undoubted, and perhaps painful,

<sup>1</sup> The relative prominence of Application in the Subject, and Signification in the Predicate, is very strikingly illustrated by the linguistic changes which Propositions undergo (in English and other languages) in Conversion—changes which appear to follow modifications of the thought expressed.

<sup>2</sup> The proposition which has been here examined is, of course, a mere example; it would be equally easy to apply similar treatment to any other proposition of the form *S is P*; *e.g.*, to the propositions Genuine disinterestedness compels admiration, or Perfect Justice is a rare virtue. An Attribute (of a Subject) may be an object of Thought, and that to which a name applies, just as much as a Subject (of Attributes) may.



experience. Indeed, limitations of interest, and corresponding abstraction or elimination, seem, for us, necessary conditions of all intellectual movement. And it appears to me that in examining the verbal expression of Judgments we find an extraordinarily close and subtle correspondence between Thought and Language. I have tried to indicate this with reference to a few points; and I think that the further we reflect, the more we are struck by the delicate and complex reciprocity between Thought, and this instrument and embodiment of Thought which Thought itself has moulded. And if it were not for objections that have been brought, it would seem to me wholly superfluous to remark that it is not of the English language alone that this is true. For instance, some of the points insisted on above are even more striking in languages which are richer than English in inflexions. Thus, in Italian, French, Latin, &c., a Proposition which has a plural Subject will have also a plural Predicate. I do not know what may be the case with what have been called "uncivilised languages"—but if they fail to correspond to, or to express, Thought, it is a deficiency which affects them alone, and for which we cannot blame either Thought itself, which in such cases has not had a fair chance, or those languages upon which Thought has done its more perfect work.

I do not see that Propositions such as *Rain falls*, *The sun sets*, &c., need (or indeed can) cause any difficulty. The form of the Predicate and its recognised significance, the history (if need be) of its formation, the thoughts corresponding to these sentences, the possibility of converting them (which depends upon their capability of being put into the *S is P* form), make it sufficiently apparent that the analysis already offered is applicable to them.

If, returning to the sentence first given, we make of the names composing it not a Proposition but a single many-worded name—*the red Russia-leather octavo volume on the chess-table*—what is the difference of Thought which corresponds to this difference of expression? The thing referred to in the Proposition and in the mere compound name is clearly the same—the one identical object with its given group of characteristics. This point is elaborated by Dr. Hillebrand, who (following Brentano—*cf.* Hillebrand's *Die neuen Theorien der Kategorischen Schlüsse*, p. 28) insists that in any Judgment *S is P* the very same numerical object is present to the mind as in the mere apprehension or ideation of an object combining the characteristics *S* and *P*. As he observes, to define Judgment as a combination of

ideas is certainly unsatisfactory. If for no other reason, it is so because there may be (as in the above) a combination of ideas without Judgment; but the reason given by Hillebrand is, because there may be Judgment without such combination. According to him, in *A is*, I simply accept or posit (*anerkenne*) *A*, and *A is* is a Judgment—the difference between Ideation (*Vorstellen*) and Judgment (*Urtheilen*) being, that in judging I posit or accept, *e.g.*, *A*, while in simple ideation this is not done. On this view it cannot be said that in *A is* there is a combination of the *idea of A* with the *idea of existence*, because in the ‘acceptance’ of *A* the idea of *A*’s existence is included.<sup>1</sup> In Judgment, says Dr. Hillebrand, the thing judged is so regarded by me as that it may be accepted in a true statement. But why a “true statement”? Every statement by its very nature *lays claim to be true*, though many are capable of being proved to be *not* true; and the Subject or Predicate of a Proposition which is proved to be *not* true has been just as much posited, recognised, or accepted, is just as much matter of Judgment, as the Subject or Predicate of a self-evident or demonstrably proved Proposition. Further, if by ‘true statement’ were meant a statement known to be true by self-evidence or by demonstration, the absurdity would be involved that we must have a criterion of true Judgment before we can have any Judgment at all. And if by ‘true statement’ were meant a statement believed by the assertor to be true, a criterion of truth of Judgment—though only, indeed, a *private* criterion—would still be a necessary preliminary to Judgment itself.

It cannot be that the ‘true statement’ is *A is* itself; because what is aimed at is, the accrediting of *A* as Subject or Predicate of a Judgment, *i.e.*, of *any* Judgment; and yet, unless *A is* is itself the ‘true statement,’ what is the force of ‘true’?

However, so far as Hillebrand’s meaning is that what is Subject or Predicate in a Proposition has a certain reference to other things of which an idea (or name) not so used—a possible but not actual Subject or Predicate—is destitute, I think that this is true. The Subject and Predicate of a Judgment have a certain *status*—one feels that between (a) the ‘mental equivalent’ corresponding to *red buckram volumes* and (b) the ‘mental equivalents’ corresponding to

<sup>1</sup> This doctrine seems to me inconsistent with Hillebrand’s view that *A* and *E* propositions do not imply the ‘existence’ of anything referred to by the Subject.

the Subjects and Predicates of the propositions *Some volumes are red buckram*, or *Red buckram volumes are durable*, or *Red buckram volumes are not aesthetic*, there is decidedly a difference—though the volumes thought of in all would be similarly described.

If *red buckram volumes* stands barely by itself, one feels that it is just waiting for a 'position'—there is indeed an idea corresponding to the term, but until thought has made some further step there is nothing which has substance and standing enough to be accepted or even rejected. But when Hillebrand goes on to say that such positing or accepting as an idea has in Judgment *is* Judgment—that the mere recognition or acceptance of, *e.g.*, *A* is a Judgment, and that *A is*, which expresses that acceptance without combination of ideas, is itself a Judgment, I think that he is wrong—that he attempts to give to the Subject (or Predicate) *in isolation* a character which it has, and can have, *only* as Subject (or Predicate) *of a Judgment*, and that he entirely fails to prove his case; and the paradoxicalness of his position is indicated by the assertion (which perhaps logically follows from his theory of the relation between "position" and Judgment) that, *e.g.*, the words *This plant* express a Judgment. What they *do* imply, is, that they are the Subject or Predicate of a Proposition, in detachment from their appropriate context. Surely either (1) *A is* is abbreviated or elliptical, or (2) it is not a Judgment. If neither of these alternatives is accepted, what can *A is* mean? The fact is, I think, that it is *not* possible to fully express a Judgment by less than two names, though it *is always* possible by compounding the Terms of a Categorical to frame *one name*.<sup>1</sup> The Subject and Predicate of a Judgment seem to have necessarily some reference beyond the mere psychological object, the presence of which to the mind is an inevitable condition of consciousness—the admission of this "psychological object" is called by Mansel the "psychological Judgment" that is "coeval with all consciousness". I understand this 'psychological Judgment' of Mansel to be *not* the same thing as Hillebrand's Judgment of *Anerkennung*.

The difference between Judgment and Ideation (*Vorstellen*) seems to me to be summed up in, or deducible from, the position that Judgment is the real unit of Thought. A Judgment has life and movement, it presents something for

<sup>1</sup> It may be observed that even single-worded names may embody the results of previous judgments; and that thus judgments now 'analytic' may imply past 'synthetic' judgments.

acceptance or rejection, it is a finished and explicit Analysis in Synthesis, it has a bearing upon and connexion with *all* the matter of Thought—*it* and *not* the 'Concept,' the bare idea, has a completeness of its own—a completeness which, however, far from meaning mere isolation, means inexhaustible capacity of connexion.

Of a mere percept or idea none of these statements can be made. The percept or idea, and the name corresponding to it (as long as it remains a mere name and not a Subject or Predicate), has not found its place in the world of Thought. A mere name, certainly, may have both Application and Signification, and any object to which it applies must, I think, have 'existence' and characteristics—an idea or percept must be an idea or percept *of something*; but of *mere* idea, or *mere* name, what more can we say? Even in saying so much, we have gone beyond mere idea and mere name, for this simple reason that we cannot think at all unless we *do* go beyond them.

I have hitherto been considering only affirmative Judgments, expressed or expressible in the form *S is P*; but something must be said of negative Judgments, and of some forms concerning which it is not obvious and indisputable that they are expressible by *S is P*. To negatives of the form *S is not P*, the analysis of *S is P* here put forward is *mutatis mutandis* applicable. We have here not an affirmation, but a denial, of identity in diversity. That the *is* *not* here, as the *is* in *S is P*, refers to Application appears from the consideration that *diversity of Signification* does not preclude the affirmative copula—witness every proposition of the form *S is P*. If the *is* in *S is P* has reference to Application, by all analogy the *is not* in *S is not P* has also reference to Application. And on examining the *thought* corresponding to any concrete proposition of this form, the analogical presumption is confirmed. Take, e.g., *Scarlet flowers are not fragrant*, or *That bird is not a thrush*. Here the things to which the Subjects apply, whether present in perception or only in idea, are thought of as distinct from anything to which the respective Predicates apply—identity is denied by the negative copula. And while in the case of any *S is P* diversity of Signification in Subject and Predicate seems necessary in order to avoid unmeaning repetition, in negatives a similar diversity is required, on pain of self-contradiction. We are concerned here not with Synthesis but with Separation.

With regard to the Judgments that are expressed in sentences of the form *X is* or *There are Y's*, I can only say

that unless *X is* is elliptical, meaning *X is existent (somewhere and somehow, or in a particular place or time)*, I can attach no meaning whatever to it, and do not know what manner of thought it can be imagined to express. *There are Y's* appears to be ambiguous, meaning *Y's are somewhere or other, or Y's are in some particular place*.

In such Propositions as *It rains, It thunders*, the only point calling for special remark seems to be the vagueness of the Subject—the peculiar form of expression here seems explicable from the peculiar nature of the phenomenon in which there is not obviously any comparatively permanent thing to which the transient activity might be referred as Effect to Cause, or Attribute to Subject.

In such sentences as *George Eliot is Mary Ann Evans,*  
*Robert Cecil is Lord Salisbury,*  
*Tully is Cicero,*

it would be denied by some logicians that these names (except, perhaps, *Lord Salisbury*) have necessarily any signification at all. I am here only concerned to maintain that in these sentences Subject and Predicate are, in every case, *diverse*; and are, by the force of the affirmative copula, applied in each Proposition to *one identical person*. This is, I think, both indisputable, and sufficient to justify the application of my analysis. And a similar account may be given of such propositions as *Courage is Valour, Bridge is Brücke, Triangle is a three-angled figure, Men are animals*. The information conveyed in all these cases may be trite or 'analytical'—but circumstances are conceivable in which it may be useful or new; and the most weighty and purely 'synthetic' statement may on occasion have the familiarity and unprofitableness of a twice-told tale.<sup>1</sup>

<sup>1</sup> Some logicians have been disposed to treat as unimportant all propositions except those which have 'connotative' names for both Subject and Predicate, and at the same time are what has been called 'Real' or 'Synthetic'. The reason for this no doubt is, that it is only such 'Real' or 'Synthetic' propositions that express what are called scientific truths. (From the point of view of General, or Formal, Logic, however, this distinction between 'Real' and 'Verbal' propositions is unimportant, and it is also to be observed (*cf. ante*) that 'analytic' propositions constantly imply previous 'synthetic' judgments.) A recent writer in *MIND*, Mr. E. T. Dixon (*cf. MIND*, July, 1893) goes so far as to say that the distinction between 'Real' and 'Verbal' propositions is "about the most important question with which Logic has to deal". (In response to this assertion one feels inclined to ask "Why?" for I cannot see that any sufficient reason is given.) Mr. Dixon means, by 'Verbal' propositions, propositions which state an 'arbitrary' 'denotation' or 'connotation' of any name, such propositions being called by him in both cases *Definitions*, and including "every item which may be formally [= ?] shown to be

My view is that *all* simple Judgments may be stated in one of the forms (1) *S is P*, (2) *S is not P*, which express (1) Identity, or (2) Distinctness [of Application] in Diversity [of Signification]—hence these forms and this analysis are absolutely General or Formal, as far as Simple (or Categorical) Judgments are concerned. I maintain further that this is (in essence) the *only* account which will apply to *all* Simple Propositions without exception (except perhaps Hobbes's account; which, however, is nothing more than a very inadequate analysis of the propositional sentence, and would admit unmeaning verbal combinations of the form *A is A*, which the analysis insisted on in this paper will not).

It may be well to consider briefly some other accounts of Judgments or Propositions which have been put forward by Logicians and widely accepted.

According to Kant a Judgment is (a) "the conception of the unity of the consciousness of different conceptions, or (b) the conception of their relation so far as they make up one notion" (*Ueberweg, System of Logic*, p. 192).

This seems not radically different from Aristotle's definition of Judgment as (c) a "combination of conceptions in which there is truth or falsehood" (*op. cit.*, p. 191). These accounts agree in being intended to apply only to cases in which we are dealing with class-names to which general notions or conceptions are supposed to correspond—they do not seem applicable to definitions, or to Propositions in which both Terms are synonyms, or either Term is a Proper Name. Hence the definitions in question are narrower than the *definitum*. But further, even as far as they may apply, they are unsatisfactory—first because too vague—(a) "conception of unity of consciousness," (b) "conception of

implied by the explicit statement". Mr. Dixon holds that "the whole of pure mathematics and symbolic logic may be regarded as purely verbal arguments, and so also might probably the greater part of the arguments of past and present logicians and metaphysicians" (why not also *mathematicians*?). This is a bold assertion, and needs much more support than Mr. Dixon has given it in his article. It would, for instance, be interesting to be *shown, in detail*, how far a science of pure mathematics could be constructed without any reference to objects of spatial intuition, visible or imagined, and to learn why it is that such science, if a purely arbitrary construction, can be the common property of so many minds, and is not inconsistent with actual experience. When Mr. Dixon goes on to say that in pure mathematics and symbolic logic no "act of judgment" is required at all, it can only be surmised that he uses the term "judgment" in some peculiar and entirely arbitrary way. What does Mr. Dixon consider to be the 'mental correspondent' of mathematical and logical propositions?

relation," (c) "combination of conceptions," are highly indeterminate expressions—of *what kind* is the *unity*, the *relation*, or the *combination* of concepts? Is the 'unity' an unity of numerical identity (*numero tantum*)? If so, a concept is combined, &c., with itself. Or is it an unity of indistinguishable similarity? If so, again, there are not *two* concepts but *one*—unless indeed we are prepared to dispute the doctrine of the Identity of Indiscernibles. Again, Kant's account has been found fault with as being too 'subjective'—it is open to Mill's criticisms of the doctrine that a Proposition is the expression of a relation between two ideas. To the particular form of this doctrine which regards the relation in question as a relation of Agreement or Disagreement between the ideas (*cf.* Whately, &c.) it may further be objected that the terms Agreement and Disagreement as here used are vague and highly ambiguous.<sup>1</sup>

According to Hegel, in every Judgment there is determination of some notion (or concept)—a partition, by distinction, of its primary unity—Subject and Predicate must stand to each other in some "universal relationship".—He will not allow that such sentences as, *e.g.*, *Cæsar was born at Rome in such and such a year, &c.*, *I slept well last night*, and so on (which he calls *Propositions*) are to be reckoned as *Judgments*; though much of what he says about Judgment seems capable of application to *all* Categoricals of form *S is P*—*e.g.*, "By saying 'This rose is red' or 'This picture is beautiful,' we declare that these are the characteristics proper to those objects".

Hegel's limitation seems arbitrary, or at least unjustified; and at any rate his definition does not furnish a *general* account of Judgments expressible as *S is P*. It seems to me also that here again (though I speak with diffidence) there is a want of clearness and definiteness in the use of the terms *unity*, *identity*, &c. On the other hand, his view of the force of the copula, and of the reciprocal dependence of Unity and Difference, seems to bring to light the essential characteristics of the nature of Judgment.

Lotze's account of Judgment is in my opinion extraordinarily feeble, though he labours hard in ch. ii. bk. i. of his *Logic* to give a philosophical account of the Categorical Judgment, to supply it with a principle, to reconcile the familiar form *S is P* with the Law of Identity, which (as accepted by

<sup>1</sup> It is with reference not to Judging but to Classing that the Category of Agreement is of primary importance; p. 12 of Jevons's *Elementary Lessons in Logic* affords an interesting illustration in this connexion.



him) declares that *What is, is, or A is A*. He defines Judgment as expressing (or intended to express) a relation (of coherence) between the matters (or contents) of two ideas; and, fettered by the conceptualism of his doctrine, he arrives in § 54 at the remarkable statement that "the impossible Judgment 'S is P' resolves itself into the three others, 'S is S,' 'P is P,' 'S is not P'". S is P "taken just as it stands" is "a contradictory and self-destructive form of expression". No doubt, if S refers to one "concept" and P to another and different one, to say *S is P* is absurd and impossible—and that it is so is surely sufficient to prove that such an interpretation of our most common form of assertion cannot be the *right* interpretation.

It is not possible here to go fully into Mill's account of the Import of Propositions, because that account, while abounding in interest and suggestion, is also voluminously inconsistent.<sup>1</sup> Here it must suffice to say that according to his own summary a Categorical Proposition is really an assertion (or denial) of Sequence, Coexistence, Simple Existence, Causation, or Resemblance. This, of course, is not a 'formal' account of Import. But if we compare what he says in § 4 of ch. v. bk. i. of his *Logic* with certain passages in ch. xxii. of his *Examination of Hamilton* (pp. 497, 498, 4th ed.) we find it pretty clearly laid down that the "most common . . . meaning which Propositions (of the form *S is P*) are ever intended to convey" is, that *WHATEVER is denoted by (or has the Attributes connoted by) the Subject, has the Attributes connoted by the Predicate*. This amounts pretty nearly to the view which I am concerned to advocate—that a Categorical Proposition asserts (or denies) Identity of Object in Diversity of Characteristics ('Denotation' being prominent in the Subject of the Proposition, and 'Connotation' prominent in the Predicate).

When Jevons (*Principles of Science*, ch. iii.) discusses the Import, &c., of Categorical Propositions, expressing them as Equations ( $A = B$ , &c.), and speaking of them as Identities, we find that some of his examples and some of his explanations are quite in accordance with the view just given. *E.g.*, when he takes the Proposition, *Tower Hill / is / the place where Raleigh was executed*, and says that it "expresses an identity of place; and whatever is true of the one spot is true of the spot otherwise defined, but in reality the same".

<sup>1</sup> I have attempted a brief criticism of his confusion between so-called 'Formal' and 'Material' points of view in § 8 of my *Elements of Logic*.

But when he goes on to say that the same analysis can be applied to, *e.g.*, the Proposition—

(1) *Colour of Pacific Ocean = Colour of Atlantic Ocean*, finding no distinction between this and, *e.g.*,

(2) *Deal = Landing-place of Cæsar*, except that in (1) we assert 'identity' of *single* qualities, while in (2) we express 'identity' of a *group* of qualities (whatever this may mean), it is clear that there is confusion between Identity *in numero* and Similarity *in specie*. *The colour of the Pacific Ocean* may be *exactly like* that of the Atlantic, but we certainly cannot say that the one *is* the other in the sense in which we can say that Deal *is* the place where Cæsar landed—or indeed in any sense at all. This confusion ruins Jevons's whole account of inference, and is even betrayed by the very name—Substitution of *Similar*s—which he has chosen to characterise his theory (*cf.* my *Elements of Logic*, pp. 157-159).

As I understand them, Mr. Bradley and Mr. Bosanquet would admit the Identity-in-Diversity interpretation of Categoricals, though I do not feel sure that their use of the notions of Identity (*numero tantum*) and Similarity (*specie tantum*) is always free from confusion.

Mr. Bradley says (*Principles of Logic*, p. 29): "In ' $S = P$ ' we do *not* mean to say that S and P are identical. We mean to say that they are *different*, that the diverse attributes S and P are united in one Subject."

Mr. Bosanquet says (*Logic*, i. 96): "The content of a Judgment is always . . . a recognised identity in differences".

Though Mr. Bradley uses *identical* above to mean *exactly similar*, and though in an article in *MIND*, vol. xiii., Mr. Bosanquet apparently uses *identity* to mean *exact similarity*, I think it may fairly be supposed that in the passages quoted above both writers are substantially free from confusion between the two notions, because otherwise it is hard to see what meaning the passages can have.

Mansel's definition too, according to which a Judgment is "a combination of two concepts related to one or more common objects of intuition" (which he explains so as to make it applicable to Propositions which have a Proper Name for Subject), is substantially a theory of Identity-in-Diversity, though it must also be reckoned among the definitions of Judgment (or Proposition) which err by the vagueness and ambiguity of some of the terms used.

With regard to the view of Import of Propositions shared by Dr. Venn and some other distinguished Logicians, it may be remarked (*a*) that they admit several possible interpreta-

tions of Categoricals, and (b) that in their view great interest centres round the question, How far does Assertion imply Existence?

(a) Since, it is said, terms may have Denotation (Extension) or Connotation, or both, any Proposition of the form *S is P* may be read wholly in Denotation, or wholly in Connotation, or S in Denotation and P in Connotation, or S in Connotation and P in Denotation; thus giving four possibilities. One might well ask here, How comes it that there can be *four* valid formal theories of Judgment or Proposition, and if there can (since each differs considerably from the others) ought there not to be four Systems of Logic corresponding to those four theories respectively? However, leaving this general question, we will look at the alternatives actually suggested.

That these four alternatives are possible, or indeed that any one of them is so, I most emphatically dispute. If the Judgment expressed by *S is P* is to be read *wholly* in Extension, then since the Application of S is (by the force of the copula) identical with the Application of P, if we get rid of the element of Connotation (in which alone there is difference) we must express the Judgment as *S is S*. *S is not P* is clearly not capable of being even supposably read in Extension only, since diversity of Signification in Subject and Predicate is rendered indispensable by the negative copula.

(2) If *S is P* is to be read in Connotation (or Intension, or Comprehension) only, again the affirmative *S is P* must melt (*cf.* Lotze) into *S is S*; for how can *any* connotation be any *other* connotation? If it is said that *S is P* expresses a *combination* of the connotations of S and P, it seems sufficient to point out that the only way in which connotations can be combined is by coexisting in (denotationally) the *same* Subject of Attributes. (One supposition after another seems to me so untenable as to be hardly capable of being stated—it can surely only be because *both* elements are simultaneously though not explicitly taken account of in *both* Terms, that these fragmentary and atomistic theories can seem to their supporters even plausible.)

Again, if in *S is P* (3) S is taken in Denotation only, and P in Connotation only, or (4) S in Connotation and P in Denotation, what is the force of *is*? Between *what* is Identity supposed to be asserted? Is it not plain that for *is* to have any assertive force there must be numerical Identity between S and P (in *S is P*), and that for any significance to attach to the assertion there must be a

*diversity* of Connotation or Intension? hence that, in order to give them significance, we have to take account of *both* momenta in the Subject, and *both* in the Predicate?

In order that, *e.g.*,  $S [=All R] is P [=Q]$  may be interpreted ("in Extension") to mean

*Class R / is / included in Class Q ;*

or ("in Connotation") to mean

*Attributes R / are / accompanied by Attributes Q ;*

not only must both aspects have been taken account of in both Subject and Predicate of the original Proposition; not only are the interpreting Propositions unintelligible without a similar analysis having been applied to them as they stand; but, further, the Class interpretation (at least) is not admissible in the case of a Proposition expressed in symbols. I mean that, *e.g.*, (1) *All R is Q* cannot justifiably be interpreted into (2) *Class R / is / included in Class Q*. Such an interpretation would not be General or Formal—there are many Categoricals of Form (1) which could not be truly represented in form (2)—unless by *included in* we mean *included in or coincident with*.<sup>1</sup>

(b) I pass now to the second of the two points referred to above, the question, as it has been called, of the 'Existential Import of Propositions'—'existence' being explained to mean "membership of the Universe of Discourse".

The point in dispute is, whether or not in Propositions of the A, E, I, O form (for it is to them that the controversy is limited) it is implied that anything referred to by the Subject-Term "exists". The answer given to this question by writers to whom I refer (including Dr. Venn, Dr. Keynes, Mr. W. E. Johnson and Dr. Hillebrand) is, as I understand, to the effect that in A and E Propositions there *is not*, while in I and O Propositions there *is*, implication of 'existence'. That is to say, Some R is Q, or Some R is not Q, can only be true if R *does* exist in my 'Universe of Discourse'; but All R is Q, No R is Q, may be true without implying that any R's occur in my 'Universe,' hence among other startling consequences (*cf.*, *e.g.*, MIND for 1892, pp. 278-281) A and E may be both "true," since A means merely There are no Rq's, and E means merely There are no RQ's; so that the assertion of both A and E amounts to no more than a denial of R within my 'Universe'.<sup>2</sup> But in order that A

<sup>1</sup> It is, of course, possible in various ways to draw attention to Signification of Subject, or Denotation (Application) of Predicate; *e.g.*, the latter is done to some extent by Quantification.

<sup>2</sup> I am not disposed here to make much of the objection that no ordinary reasonable person would dream of thinking that A and E may

and E together may *deny* R (*i.e.*, the 'existence' of R), A and E must both be *true*. But what *truth* can assertions about R have, if R is non-existent? And it is to be observed with reference to (1) A (All R is Q) and (2) E (No R is Q), that in *each* of those two propositions the *whole* of R is spoken of, whereas in  $\{Rq = 0\} = (1)$ , and  $\{RQ = 0\} = (2)$ , it is only the two propositions *taken together* that cover the whole of R.

Of course, the Terms we use suffer continual unspoken limitations from their context; but what justification there can be for saying that a region within which the things I am talking about do *not* occur is *my* Universe of Discourse, I cannot see. And what are the supporters of this view prepared to say about *S is P* as a form expressive of *all* Categorical Propositions? My principal objection to the acceptance of this view of A and E Propositions is that I cannot see what *meaning* can possibly be supposed to attach to a 'Proposition' to the Subject-Term of which nothing 'existent' corresponds in any region to which I am referring.

Mr. Alfred Sidgwick observes that "to predicate anything whatever, except non-existence, of a Subject, is to predicate more than its mere existence". I should go further, and say that in order to predicate non-existence in one sphere it is necessary to postulate existence in another. If I say

(1) Dragons are non-existent,

or

(2) Round-squares are impossible,

I do of course mean to imply the *non-existence* and *impossibility* of Dragons and Round-squares respectively—but it is non-existence and impossibility in a certain region that is neither all-embracing nor even that to which I primarily refer. Unless I refer to *something*, existent *somehow*, in *some* region, what is it of which I predicate non-existence or impossibility (within a given region), what is it which I exclude from those regions to which 'non-existent' and 'impossible' refer? If a thing is non-existent everywhere, what does the exclusion of it from a given region mean? What *is* an absolutely non-existent thing?

The Predicate of (1) (non-existent [in Nature]) refers to the region of physical Nature; of (2) (impossible [in space]) to the region of Space (or Space-imagination). But surely the region of the *Subjects* of (1) and (2) is a region (exclusive

be true together, that I cannot be inferred from A nor O from E, &c.; but I think it might furnish an argument worth considering, since Logic is at bottom consistent with Common-sense.

of Nature, and actual or imagined space) in which Dragons and Round-squares respectively *do* exist for me at the time when I am talking of them—namely, a Region of Supposition—such a region as Lord Beaconsfield referred to when, in a Debate on a Burials Bill, he spoke of himself as “a Nonconformist contemplating his burial”.

Unless ‘existence’ in *some* region is postulated, I am wholly unable to understand how any meaning can be given to a so-called ‘Proposition’. No one objects to admitting regions of, *e.g.*, Fiction and Imagination—why not then, also, allow this Region of Supposition—a region to the full as indispensable and still more populous, though, in part, even more removed from the solid ground of Fact?

With regard to the Propositions (1) and (2) above, I should be inclined to say that each has a certain reference to *two* regions—the force of the Propositions being to affirm the (1) non-existence and (2) impossibility *in a region referred to by the Predicate* of the *Subjects* in (1) and (2) respectively. The point I wish to insist on here is strongly brought out by such a proposition as, *e.g.*, *Some combinations are impossible*; and this proposition also illustrates, I think, the difficulty of applying the view that while A and E do *not*, I and O *do*, imply the ‘existence’ of (*not* their Subjects but) that to which the Subjects apply. Is any more ‘existence’ implied here than in my (1) and (2) above?

In conclusion, I should like to say a word about some of the bearings of the Identity-in-Diversity view of Judgment. The *possibility* of Propositions thus analysable seems to me to depend upon the fact that we neither know nor can suppose anything whatever that has not a plurality of co-existent characteristics,<sup>1</sup> and hence a plurality of names; their *actual use* upon the fact that, when we thus express judgments about things, it is for the sake of drawing attention to some selection of their characteristics.

<sup>1</sup> Hence we might state, as the Principle of Categorical Assertions, a Law of Identity-in-Diversity which would connect interestingly with an Inductive Principle of Uniformity of Coexistent Characteristics, thus:—Law of Identity-in-Diversity = Everything has a *plurality* of characteristics (A is B); Law of Contradiction = If a thing has any given characteristic, it has not the negative of that characteristic (If A is B, A is not not-B); Law of Excluded Middle = Anything has either a given characteristic or its negative (A is B or not B); Inductive Principle = Every characteristic is *inseparable* from *some* other characteristics; and there is an *uniformity* of interdependence between characteristics. (Might not the Law of Contradiction be regarded as the formulation of a self-evident case of uniform connexion—that, namely, between *any* characteristic and the negation of its negative?)

The Identity-in-Diversity theory of Judgment supplies the principle and explanation of Immediate Inference by Conversion, by Added Determinants and by Complex Conception, and of the process which Jevons (from an unfortunate confusion already referred to) has called the Substitution of Similars. Moreover, it is on this same principle that the possibility and validity of Syllogistic Inference, and the connexion of Antecedent and Consequent in Inferential Propositions (*e.g.*, If M is P, S is P), depend. It also supplies something like a scientific basis for the classification of Fallacies, and furnishes a clear and simple explanation of various disputed questions—*e.g.*, Quantification of the Predicate, and the interpretation of Alternative Propositions.



### III.—IDEALISM AND EPISTEMOLOGY. (II.)

By Prof. H. JONES.

I HAVE tried to show that the critics of Hegel and his followers have taken his theory of thinking to be a theory of thoughts, and converted his process of reality into an unsubstantial system of abstract ideas. I have also tried to show that the systems of ideas whose nature, validity and relation to reality the Epistemologists investigate, do not really exist. What exists is a series of mental operations, activities of reality, as manifested in the subject who thinks and in the conditions, within him and without, which make his thinking possible. There are thinkers and things thought about; but there are no third entities. The mental processes performed by individuals do not leave behind them any products which can be regarded as having the apparent independence and real existence of things. The *only* result of mental activities is the modification of the mental faculty. Thinking develops the thinking powers, but it does not aggregate, either within the thinker or elsewhere, a heap, or mass, or series of ideas. Hence the phrases "world of ideas," "circle of ideas," "system of knowledge," indicate no actual fact. They are substantiated abstractions, as unreal as a world or circle or system of deeds severed from their agents. Ideas pass away never to be recalled, just as truly as actions or sensations pass away. They are serial phenomena, which can neither be associated nor dissociated, for they have no permanence and no universality. None of them serve to connect others, and they form no system, and consequently no theory of them is possible. We may have a science of the process of thinking; but a science of the products of thought, a theory of knowledge and of the nature and validity of ideas, is possible only at the expense of substantiating what is fleeting, and of treating abstractions as if they were realities.

Now, there is a sense in which every science (and even Metaphysics) deals with the fleeting as if it were permanent, and with abstractions as if they were real. We *must* tear up the unity of the real and deal with aspects only, for the simple reason that we cannot think all things at once. It may, therefore, seem that the charge made against Epistemology may be directed in like manner against all human

knowledge, which certainly never reflects the whole of being but is always incomplete. If 'ideas' severed from the subject who thinks them and from the objects which they mean are unreal, so also, it may be said, are the 'quantity' of the mathematician, the 'laws' and 'causes' of physics, and even the 'things' of common-sense. All these in their last resort are abstractions and myths. We may in fact say at once that all human thought is untrue and all its objects are unreal, for the former is incomplete and the latter are abstractions. But this is only a half truth. If all knowledge is false in so far as it is only a partial revelation of reality, all knowledge is true in so far as it is *nothing but* a partial revelation of reality. If every fact and event is in its isolation only an appearance, every appearance in its place within the system of reality is itself real. The condemnation of the incomplete and partial as false and unreal itself depends on the presence of the complete and real. Hence no science is altogether false and no abstraction is altogether nothing. In other words, while every science is untrue in so far as it is inadequate to the reality which it investigates, it still does investigate reality. But the unique characteristic of Epistemology is that it postpones the investigation of reality to another matter; it must pronounce upon the nature and validity of knowledge before it can be sure that we are not foreclosed into a thorough-going scepticism. It must investigate ideas in order to show first of all whether or not their whole meaning is not false, and their objective reference a mere illusion. So that the ideas with which it deals, while not altogether unreal, are set up over against reality. In so far as they have meaning, or are more than psychical events, they cannot be even appearances, for they can find no place in a system of reality whose very existence is matter of doubt. Epistemology, in a word, differs from every other form of knowledge in that it cuts itself entirely free of reality to begin with. It must not assume the reality of the objects to which the ideas refer, for this is the very problem it has to investigate. It has nothing to do with the reality of the ideas as psychical occurrences, for that is the business of Psychology. It thus abstracts from reality on both sides, and by dealing with the mere meaning of ideas seeks a place between Psychology and Metaphysics.

But this process of double abstraction from reality, this withdrawal into the world of mere meaning, destroys the very possibility of Epistemology. I shall try to show that it finds its problem by only *seeming* to retire from reality, and that in so far as it actually does retire from it, it

can find neither its problem nor its solution. In other words, I shall try to show that the whole edifice of Epistemology rests on a contradiction, on an attempt, that is, to treat its first starting-point and basis as both real and unreal. I do not deny the possibility of a theory of knowledge in every sense. I deny *this* theory of knowledge, because of the abstraction which is vital to it and at the same time fatal to it. In order that we may have a true theory of knowledge we must undo the abstraction on which Epistemology rests. We must restore the relation of ideas to reality on both sides. We must regard ideas in connexion both with their psychical occurrence and with the actuality of their objects. We must take ideas, not as independent entities or mere meanings, but as manifestations of the activity of reality. We must, in a word, base our theory of knowledge on a theory of reality, and either regard it as a particular science dependent on Metaphysics, as a part of Psychology, or else, by pressing its hypotheses and categories home, identify it with Metaphysics.

The importance assumed by Epistemology in modern times demands that an attempt to cut its very root should be justified in detail. Epistemologists insist, not only against Idealism, but also against every other philosophy which professes to deal directly with reality, that before we can legitimately say one word as to its nature, or take one step towards constructing a Metaphysic, we must solve certain preliminary problems as to the nature and validity of knowledge. Prof. Seth puts the matter in this way: "Is there any reality beyond the conscious states themselves and their connexions? If there is, in what sense can we be said to know it? Is knowledge, inference, or belief the most appropriate word to use in the circumstances?" (*Phil. Rev.*, i. 136). "How, or in what sense, does the individual transcend his own individual existence and become aware of other men and things? It is this relatively simple and manifestly preliminary question that Epistemology has to take up. Subjective states are plainly our data; it is there we have our foot-hold, our *pied à terre*; but unless we can step beyond them, Metaphysics in any constructive sense can hardly make a beginning. Epistemology, if its results are negative, necessarily leads to a thorough-going scepticism; but if its results are positive, it only clears the way for metaphysical construction or hypothesis" (*Phil. Rev.*, i. 138).

Two doctrines are set forth with admirable clearness in these words, namely—first, that the problem of Epistemology is to explain the transition we make, or seem to make, in

knowledge, from "conscious states" to a reality beyond ; second, that this problem of the nature of the transition must be solved before we can attempt to determine whether there is reality and what is its nature. In order to solve its problem, Epistemology is furnished with "plain data". These are "subjective states," 'in which it has its foot-hold, its *pied à terre*'. But in this last statement I find a most serious difficulty. What meaning is attached to these "subjective states," on which as the one fragment of solid ground the epistemologist plants his foot? Following the lead of Prof. Seth and other epistemologists, I accept the distinction on which they insist as against Idealists, the distinction, that is, between a fact or event, and the knowledge or the idea of the fact. We are particularly warned by these writers not to confuse reality in any form with our thoughts concerning it. Lotze is most emphatic in his view that feelings can never be the ideas of them. And this applies in a similar way to all the phenomena of consciousness. The distinction between a psychical occurrence and the consciousness of that occurrence is as broad as the distinction between any other event or fact and the *idea* of the event or fact. The *idea* of the toothache, or of love or hatred, or of the perception of an object, or of a volition, is no more the actual toothache, or love, or hatred, or perception, or volition, than the idea of Arthur's Seat is the actual Arthur's Seat. It does not matter whether the fact be subjective or objective, it is never the idea of itself.

Of course this difference rests on the presumption made by Epistemologists that *ideas* of facts, psychical or otherwise, have sufficient substantiality to be opposed to the facts. Apart from this most questionable assumption no one can deny the distinction. I would myself insist upon it as a universal and necessary truth. To assert that a thought is the thing thought of, or that one psychical activity is another psychical activity, is tantamount to dissolving the continuity of being, and contradicts the first condition of thinking. Nothing can be anything but itself. The fact is the fact, the event the event, the thought the thought ; and there is an end of the matter. No metaphysical theory can affect this fundamental truth. Even if it be true, as Idealists are supposed to say, that reality is thought, or thoughts ; nevertheless, the thoughts *of* reality are not the thoughts which constitute reality ; they are at the best *other* thoughts, and are either unreal or additions to the first reality. A complete idea of the Universe would not be the Universe ; the idea would be the idea, and the Universe the Universe. And

the latter would have to be enlarged so as to take the former into it, or the former would have to be shown to be an unreal abstraction.

In the meantime, I accept, then, in the fullest way the distinction between thought and reality on which our critics insist. Let us now see its bearing on their doctrine. If the actual fact or event is never the knowledge of it, then our "subjective states" are not our knowledge of them. Both are facts, of course, and both are psychical facts; but they are different psychical facts; the one is the object known, the other is the knowledge of the object, both falling within Consciousness. Now, the question arises, which of these is the datum of the Epistemologist? In which does he find his "foot-hold, his *pied à terre*"? Is it in the reality, or is it in the knowledge of it? Is it the subjective state as a psychical occurrence, or is it the reflective knowledge of that psychical state?

Let me put the difficulty in another way. The Epistemologist has a "chasm to bridge over," and that chasm separates the sphere of knowledge from the sphere of reality. "The chasm is not absolute," we are told, "else knowledge would be for ever impossible." Nevertheless "he" (the knowing individual) "does not pass over into the things, nor do the things pass over into him. At no point can the real world, as it were, force an entrance into the closed sphere of the ideal; nor does that sphere open at any point to receive into itself the smallest atom of the real world, *quâ* real, though it has room within itself *ideally* for the whole Universe of God" (*Phil. Rev.*, i. 515, 516). Granting, for the sake of argument, that both of these closed spheres exist, the question arises: Into which of these exclusive spheres do the "subjective states" fall? In which of them does the Epistemologist find his "foot-hold, his *pied à terre*"? Is it in the ideal sphere, or in the real sphere, or in both? There is, of course, a sense in which the "subjective state" is both real and ideal. I mean that an idea is ideal as having meaning, and real as being a psychical event. This truth has by no means escaped Prof. Seth. "Of course," he says, "if we take reality in the widest sense, our cognitive states are also part of reality. The wildest fancy that flits through the mind exists in its own way, fills out its own moment of time, and takes its individual place in the fact-continuum which constitutes the universe." But, as he tells us elsewhere, this existential side of the idea is of no interest to Epistemology. "It is only for the psychologist, however, that mental states are interesting on their own account, as

subjective realities or facts" (*Phil. Rev.*, i. 132). Epistemology deals only with their meanings, and 'conveniently neglects' their other side. As psychical events filling out their own moments of time they are 'parts of reality,' examples of what is called above "smallest atoms of the real world". But being real "they cannot force an entrance into the ideal sphere," and "the ideal sphere cannot open at any point to receive them into itself". They thus fall into two fragments, one of which is seized by Psychology and the other by Epistemology. Epistemology, being a system of ideas, cannot adopt them *quâ* real. (Psychology in some mysterious way can, although it, too, is a system of ideas.) As facts, or as real events, they are shut out of the ideal sphere. Seeing that, *quâ* real, they escape the clutch of Epistemology, Epistemology does in strictness not deal with *them* at all, but with ideas of them. But as the ideal is never real, as their spheres are entirely exclusive, how is Epistemology possible? If it starts from the subjective state as real, then the real and ideal are not separate. The Epistemologist actually knows *this* real thing. He has *this* reality in his hand immediately and directly; and the question which he asks, whether he can or can not know reality at all, is absurd. He assumes as his starting-point that he does know it, and the only reasonable question he can ask is, whether, knowing one reality, he can or can not know some other reality. If, on the other hand, the Epistemologist can not know facts but only ideas, if he starts not from the subjective state, or from the self, but from his idea of that state or self, then it may be asked, what kind of foot-hold or firm ground does he find in it? What special virtue lies in the idea of a subjective state more than in the idea of a stone, a stick, or griffin, that he should 'find in it his *pied à terre*'? The idea of the self is no more the self than the idea of the world is the world. Hence, if we refuse to play fast and loose with the reality of the subjective state, if we adopt and hold fast to the two exclusive spheres of the ideal and real, Epistemology seems to me to be in an inextricable dilemma. It cannot deal with the subjective state as real, for, *ex hypothesi*, it has first to pronounce on the possibility of knowing any reality, on the validity of the objective reference of any idea. And, on the other hand, it cannot deal with the subjective state as a mere idea; because if it begins with an idea it must end with ideas. There would be no outlet from the sphere of ideas, for surely it is preposterous to seek such an outlet by having more ideas. It has no foot-hold, its very dream of reality would vanish, and with it its own problem.

But, it may be urged, there is a third possibility. These subjective states may have the unique characteristic of being both real and ideal; or mind may have the power of knowing in this instance the actual reality itself; or, in this instance, at this point, the ideal and the real spheres interpenetrate. And this is what Prof. Seth means when he insists that the chasm between the ideal and the real, which 'nothing can bridge over,' is 'not absolute'. This is also implied in the use of the word 'datum'. "Subjective states," it is said, "are plainly our data"; and a datum manifestly means a reality that is also known, at least to some extent. A datum that is not real, and a datum that is not known, are obviously meaningless phrases.

Now I have no objection to the statement that "subjective states are plainly our data". I would add, however, that they are data only as psychical events 'filling their own moment of time, and taking their individual place in the fact-continuum which constitutes the universe'. They are data as 'parts of reality'. And I would add further that mountains and rivers, other men and other things, are data in precisely the same sense. If the real state of the subject and the idea of it, if the actual self and the knowledge of it, come together in the one case they come together in the other. Or, on the other hand, if the idea intervenes between us and mountains and rivers, the idea intervenes between us and the psychical states. If the actual Arthur's Seat eludes our grasp, so does the actual self. Idea and existence, thought and thing, are similarly related in all cases. If Reality sunders into two aspects, if it has both an ideal and existential side in one case, it has the same in all other cases. Reality, whatever it is, is consistent with itself; and if it has as its fundamental characteristic the function of appearing as idea in the case of subjective states, it has that characteristic always. If not, how would even the empty conception of any reality other than psychical states ever occur to us?

I do not expect, however, that Prof. Seth will admit this. Its admission is not consistent with his fixing on subjective states as in some special way giving us our foot-hold. So that the question at issue turns out to be this: Whether or not we know anything actual *besides* subjective states; or, in other words, whether Sensationalism be not, after all, the true philosophy. But I do not expect that Prof. Seth will admit this either; for it is inconsistent with his view that, besides an Epistemology which concerns itself primarily with subjective states, we may have a Metaphysical doctrine of reality in general which may be either Idealistic or



Materialistic. Moreover, he knows the history of Philosophy too well to be ignorant of the fact that Sensationalism leads to 'thorough-going scepticism'. There is some confusion here which we must try to disentangle.

We have set aside two alternatives for Epistemology—the alternatives, namely, of starting with a mere idea, or with a mere fact; we have, in other words, thrown overboard the absolute exclusiveness of the real and ideal spheres, and accepted 'the subjective state' as in both spheres at once, that is, as a 'datum,' or reality known. Now the problem arises, how can Epistemology, starting as it does with reality in one particular form, ask its primary question? Epistemology is defined by Prof. Seth as "an investigation of knowledge as knowledge, or, in other words, of the relation of knowledge to reality, of the validity of knowledge. This, at least, is the fundamental question to which other Epistemological discussions are subsidiary" (*Phil. Rev.*, i. 130). "Our cognitive states appear to refer themselves to a reality which we know by their means. Epistemology does not, like psychology, rest in the appearance. It seeks to determine whether the appearance is true, and, if true, in what sense precisely it is to be understood" (*Phil. Rev.*, i. 136). Will the reader compare this statement of the problem of Epistemology with the one quoted above? "Is there any reality beyond the conscious states themselves? How, or in what sense, does the individual knower transcend his own individual existence and become aware of other men and things? &c." If he does compare these statements of the problem of Epistemology, I think it will become evident that Prof. Seth confuses two distinct questions, and that his Epistemology rests on that confusion. The first of these questions is, Can we pass from knowledge to reality? Or can we know *any* reality? The second of these questions is, Can we pass from subjective states as known realities to other realities, persons, or things? Can we know any reality *besides* subjective states? The first problem is concerned with the possibility of the transition from knowledge, *excluding all reality*, to reality; the second with the possibility of the transition from the knowledge which *includes* one species of actual facts to a knowledge of other facts. We may put the distinction less accurately but none the less fairly by saying that the transition in the one case is from ideas to reality, in the other case from reality to reality.

I think it is not necessary for me to insist that there is a fundamental difference between these problems, and that it

should be made clear which of them is the real problem of Epistemology. Does Epistemology start within the ideal sphere and then try to get out of it to reality? Or does it start with a fact and, like every other science, investigate the relation of its assumed fact to other facts? If it does the first, then I need not repeat what I have already urged, that it can never reach reality, nor even ask whether there is reality or not. It is shut up in the ideal sphere. If it does the second, then it does not "inquire into the nature of knowledge as knowledge, of the relation of knowledge to reality," but into the nature of reality, and of the relation of reality to reality.

The first question is unanswerable. We cannot get out of the circle of mere ideas, because we are never in it; and we cannot get into the sphere of reality, because we are never out of it. And the assumption of a 'datum,' which is manifestly indispensable, shows that Epistemology itself proceeds from a reality and not from a mere idea. The second question is answerable; but it is not the question of Epistemology. It is the question of the relation of a part of reality to reality in general, a question which is asked by every science, and which definitely assumes that reality is knowable, and, so far, actually known.

But Prof. Seth cannot afford to distinguish these questions, nor can Epistemology. It *must assume* reality in some form in order to have a foot-hold. This is done in the second question, where the actuality of the subjective state is taken for granted. On the other hand, if Epistemology is to make a preliminary inquiry into the validity of the objective reference of knowledge it *must not assume* reality; and hence the first question is asked. Epistemology thus rests on a self-contradictory basis: it both must and must not assume reality. And we find in this very necessity an explanation of the extraordinary statements made by Prof. Seth, and quoted in my last article, that 'the chasm between knowledge and reality is not absolute,' and yet 'that nothing can serve to bridge it over'. The radical unreasonableness of the science is concealed by these ambiguous ways of stating its problem.

That it is based on a contradiction which is hidden beneath a confusion may be shown in another way. This confusion lies in the phrase "subjective states". States may be 'subjective' in two senses. First, a state may be subjective in the sense of being a portion of the experience of an individual subject. Feelings and volitions as well as cognitive activities are subjective in this sense.

Mine are mine, and yours are yours. Secondly, a state may be 'subjective' in a sense which is applicable to ideas only, and not to feelings or volitions. Subjective ideas are those whose objective reference is not valid. In a word, they are untrue ideas, or illusions. We may, and continually do, inquire into the validity of a subjective state in this second sense; that is, we investigate the truth of a part of our knowledge by reference to our view of reality as a whole; we test a part of our experience by reference to the conditions of the possibility of any experience, or, in other words, by reference to its fundamental principles. But subjective states in the first sense are neither true nor untrue; for they are *ex hypothesi* parts of the life of the individual; they are assumed to be facts.

Now Prof. Seth uses either of these senses at his convenience, and he saves his Epistemology only by doing so. At one moment 'the subjective state' is a real experience, a part of the world of reality in which he finds his foot-hold. At the next moment 'the subjective state' is an idea whose objective reference may, or may not, be valid. It is a part of the ideal world. And it is only this ambiguity which gives 'the subjective state' its value for Epistemological theory. It makes it possible to start from reality while seeming to leave the question of the possibility of knowing reality untouched; for the subjective state is either ideal or real as we please. In fact, the unconscious movement of the Epistemologist may be justly described as follows. He first starts from the subjective state or idea, as a fact of experience; then he slips the existential side of the idea up his sleeve and treats it *merely* as having meaning; then he looks up and asks, where can we find the reality which corresponds to this meaning? It seems to me that we can justly demand greater explicitness on this fundamental matter of the problem which Epistemology seeks to solve. Which is its problem? Is it whether we can know any reality whatsoever, and, if so, how? Or is it whether we can know any reality besides subjective states, and, if so, how? Epistemology starts from the subjective state as real, or it does not. If it does *not*, then it starts *ex vacuo*, and although it is not dumb, it has nothing to say. It is shut up absolutely and irretrievably in a circle of ideas and has at no point any foot-hold or contact with reality. On the other hand, if it *does* start from a real fact as known, then it has assumed not only the possibility but the actuality of a positive relation between the real and the ideal. It is confessedly unable to get behind reality in order to set forth on its specific inquiry, and has assumed a datum. Its

problem is, therefore, no longer that of the validity of knowledge, but that of the relation of one fact to another, and in this respect it is just like other special sciences. It sinks in fact into a part of Psychology, and, as such, it is dependent upon, instead of preliminary to, Ontology. Like Idealism, which it criticises, it bases the cognitive relation of thinker and things upon their Ontological relation, instead of *vice versd*. It seeks to understand, and not to make, a connexion between the real and the ideal. It denies the chasm between the ideal and the real by treating the subjective state as both; and thus, instead of having two spheres mutually exclusive, it goes far towards showing that reality has two sides, the existential and the ideal, or, in other words, that the real reveals itself as ideal.

I conclude, then, that Epistemology, as an inquiry into the validity of knowledge in general, is an impossible science, and that it has seemed possible only because, under the guise of this inquiry, it really deals with quite another problem, namely, whether it is possible to know anything *besides* subjective states. This is not an Epistemological inquiry, but a Psychological one aspiring to be Metaphysical. Before examining this second inquiry, and in parting with Epistemology as the science of the validity of knowledge in general, I should like to say that there is an objection frequently urged against such a science which seems to be plain and unanswerable. It is that it is impossible by knowing to pronounce upon the validity of knowledge as a whole. We may test a part by reference to the whole or the principle of the whole, but we manifestly cannot test the whole by means of a part. I have not used this argument; Epistemologists have been appealed to so often from this side that I must conclude that they are deaf on it. The same argument might have been put in another way, namely, by simply asserting the incontrovertible fact that Reality is all-inclusive, and, as such, takes in even false ideas. But this also is admitted and ignored by Epistemologists. They manifestly carry reality with them as a criterion whereby to distinguish truth and error, and they use it in every judgment that they make. But this does not deter them in the least from asking where is reality, or whether it is or is not. These broad objections having failed, I had recourse to the more tedious process of analysing the claims of this pseudo-science, for which I offer this apology to the intelligent reader.

It remains now to examine the second problem, which pretends to be Epistemological, but which I have asserted to be a

Psychological one aspiring to be Metaphysical—the problem, namely, whether we can know anything *besides* our own subjective states. This inquiry starts from reality as directly, if not as frankly, as Idealism itself; hence the choice offered us is not between an Epistemology and a Metaphysic, but between one Metaphysic and another. And I think, as already hinted, that the Metaphysic to which it leads is simply Sensationalism. This Sensationalism differs from that of Hume or Mill, only in that it has been sophisticated to the highest degree by its intercourse with Germany, and by its attempt, at least in Prof. Seth's hands, to attach itself both to German Idealism and to Scotch Realism of the rough and ready type of Reid. To prove this, I acknowledge, is a task I am loth to undertake. I am not sure whether it would be a service to philosophy to separate the elements of a theory which represents itself as a combination of Epistemological Realism with Ontological Idealism; which, in other words, as an Epistemology asserts that it deals with mere ideas, as a Realism asseverates that these ideas are true, as an Ontology proclaims that it deals with reality, and as an Idealism pronounces this reality to be either thought, or thoughts.

I shall content myself with examining its fundamental assumption—That we do know subjective states as *real facts*, that at first at least we know nothing else, and that what we require to discover is whether, and, if so, how we can know anything besides subjective states. The first characteristic of this theory I should like to point out is that it starts from a *particular* datum, regarded as indubitable—"Subjective states are plainly our data". In this respect it reminds us of Cartesianism, which also sought for something fixed and sure, however small, as a basis on which to erect its structure. It differs from it in putting a 'subjective state' in the place of the '*cogito ergo sum*,' and in regarding its subjective state as real as well as ideal.

Now the idea of basing a metaphysical theory on an indubitable datum is radically false, and involves a mechanical method of procedure and a mechanical view of both thought and reality. In other words, the assumption of such a datum implies that thought links its objects externally one to another, because in existence they are isolated and particular. And just because particulars alone exist and the connexions between them are thought-woven 'spider-webs,' cognition never can correspond to its object. It thus, as the history of Associationism has proved, leads directly through the discrepancy of knowledge and reality

to thorough-going scepticism. But modern logicians contend with considerable unanimity, and, it seems to me, with convincing cogency, that thought does not move from a fixed datum by external aggregation, but by differentiation from within and re-integration. It must of course have a datum; but its datum, so far from being fixed, only gradually reveals what it is in the progressive evolution of knowledge, and so far from being particular it is implicitly all-inclusive. Modern Metaphysics, in accordance with this logical theory, starts from a view of reality as a whole, and not from a fragment; and its task is to expound the inner articulation, the internal harmony of this whole, and not by any means, or in any way, to proceed from the knowledge of one thing to the knowledge of other things. So far as I can see, we are practically forced to choose between these two methods. Lotze and his followers, I need hardly say, mingle these methods as they mingle metaphysical doctrines. But if we recognise the opposition between them, it becomes obvious that we must either adopt Associationism with its external and contingent linking of fact to fact [beginning with a sure one, hopping on to others and assuring them through it, finding its universal both indispensable and untrue, obliged to have 'webs' and obliged to make them spider-films]—or if not we must regard the whole as given at first, and watch its process of inward development. And this second method, if it is consistently carried out, must refuse to characterise its datum except in terms of the revelation it makes of itself during the evolving process. Thus each of its successive characterisations is known to be only proximate, a mere starting-point for a better. It will find certainty, or rather will seek it, in the end and not in the beginning. It possesses no certain fact to begin with; but, on the contrary, it finds its particular fact guaranteed as fact only by reference to the whole system of reality within which the particular fact obtains a place, and in relation to which alone it is real.

The conception that 'certainty' is to be found only in a complete system, in a consistent view of the world as an organic whole, and not in erecting an edifice of knowledge on a fragmentary fixed datum by mechanical means, is due to Kant; and in it lies the living force which brought about the momentous revolution in modern philosophy. His attempt to discover the conditions of experience, the fundamental question of the Critique of Pure Reason, as indicated or expressed in 'How synthetic *a priori* judgments are possible,' signifies that he had, once for all, turned his back on the old method of philosophy which started from psychical

phenomena, from ideas or impressions, and then sought realities corresponding to them; and that, beginning with the conception of knowledge as a whole, or, in other words, of knowledge wherever it can be found, he sought to lay bare its constitutive principle. It is quite true that in his hands the problem assumed what may be called an Epistemological rather than an Ontological form, and that in giving us his theory of knowledge he refused to pronounce upon the nature of reality, or things-in-themselves. But it is also true, in his hands, that the things-in-themselves were gradually deprived of all their significance, that the reality which he considered to be opposed to knowledge became a *caput mortuum*, of no possible interest to any one. He left nothing to distinguish his theory of knowledge from a theory of reality except the thin disguise of the word 'phenomenon'. Thus, whether we accept the higher or the lower interpretation of Kant, it remains true that the revolution in philosophy which he brought about consisted in a fundamental change of method; it consisted in setting forth from experience as a whole (or as such) to investigate its internal conditions, instead of first dogmatically asserting the existence of a fragmentary reality, then linking the rest of reality to it by means of the external categories of mechanism.

Now the attempt which Prof. Seth makes to start from 'subjective states as plain data' is simply a reversion to the old associative method employed by Hume and his school; and it argues that whatever else has been learnt from Kant, the supreme lesson he taught has not been taken to heart. Is it not plain, even yet, that if we begin with 'subjective states' we must either expand these subjective states so as to make them all-inclusive, or else leap from them into something absolutely different? Is it not indisputable that we must conclude either that there is *nothing but* subjective states, or, if there is, that it is absolutely unknowable, and not only unknowable but unbelievable, because inconceivable? We cannot proceed from the part to the whole except by discovering the principle of the whole in the part; we cannot proceed from subjective states to 'other persons and things' except by finding in our subjective states the principle of 'the other persons and things'. In the mid-stream of Metaphysics we cannot swap horses. Knowledge cannot "leap," nor faith either, if it is 'according to knowledge'. On the other hand, if we do find the principle of the whole in our subjective states, then in dealing with them we are not dealing with 'plain data,' but with the whole of reality implicit in these data which has to be made plain by further knowledge. We are establishing an



Ontology and not an Epistemology. The datum has ceased to be a particular one. If it really were particular we could proceed from it to nothing else. We could not even know it, for thought is surely relative. I do not mean to deny that we know 'subjective states,' or that they are data; but we know them and they are data for further knowledge, because in knowing them we know all reality—in part. Every datum, owing to the organic nature of reality, has in it the principle of the whole and exists only as its manifestation. In this respect a 'subjective state' is as good as any other datum; but it is no better. And the use of the term 'subjective' for a datum of knowledge is worse than useless, for it brings with it misleading associations. That which is a datum, I insist once more, cannot *ex vi termini* be subjective in the sense employed by these writers. The subjective which is a datum for further knowledge is also objective; as a datum it contains in it the principle of the whole. We cannot, except by a process of abstraction and for such merely practical purposes as those of the special sciences, ignore its relation to the whole, tear it from its context, treat it as an isolated part. If we do so tear it, it will lose all its meaning; it will be nothing real, it will not have even the virtue of an interjection. Philosophy exists in order to correct the abstractions of ordinary thought and science. It is false to its peculiar mission if it neglects the reference in every datum to the whole of reality. For it matters not whether we start from the isolated subject or the isolated object; in isolating our datum we have mutilated and paralysed it. We cannot do without a datum, as our critics themselves urge; but every datum we can possibly assume is in its last resort a universal, and the distinction of subjective and objective, like every other, falls within it.

Idealism, in the Berkeleian sense, as a theory of the subjective in pursuit of the objective, is as false as Materialism which starts from a mere object and looks for a subject. And Epistemology, which is engaged with knowledge as distinguished from reality, and which, while pronouncing upon the nature of the former, postpones all questions as to the nature of the latter, is subjective Idealism in disguise. So far from being preliminary to Metaphysics, it is itself a Metaphysical theory and a false one. The 'subjective states' which it assumes are 'plain data,' and, being data, afford a 'foot-hold' from which without break or leap we can proceed to further knowledge. Either Epistemology begins with these data as isolated particulars, and therefore *ends* with them; or else it begins with them as manifestations of a reality which, with all its apparent

and even real differences, is fundamentally one and the same in them and in all other facts. In the latter case it is Metaphysics. It can *appear* to be something else, to be a science preliminary to Metaphysics, only because these subjective states which furnish the theory with its data are at once taken to be real and unreal. It seems to me plain that inasmuch as Reality (or, if the word is preferred, the Absolute) appears in every datum which we can assume, and inasmuch as we must assume a datum, seeing that thought cannot spin *in vacuo* on its own pivot, the search for a form of knowledge preliminary to Metaphysics is futile. No science can be preliminary to Metaphysics. In a strict sense there is no science of the form of knowledge besides Metaphysics; no theory of the not-real or the not-as-yet-real can be invented except by the suicide of reason, and even that would not invent it. All the special sciences are doing the work of Metaphysics, and doing it in an admirable way, even though, or even because, they attempt to justify neither their categories nor their hypotheses. They are in no sense its rivals; nor are they preliminary to it, except in the sense that partial knowledge is preliminary to completer knowledge. If Epistemology in its attempt to avoid being a Metaphysical theory likes to rank with them, and to deal with its data of 'subjective states' in their spirit, relating fact to fact in a consciously abstract way without aspiring to give a final account even of knowledge, I would have no objection to it. I would prefer to call it the Psychology of Cognition, and would be glad to know it more thoroughly, partly because in knowing it better I would *ipso facto* know more of reality as a whole. But a science which postpones *all* reality and proceeds without any datum except bare ideas, which is the first form of Epistemology we have examined, or a science which proceeds with a datum regarded as real and yet as excluding the principle of the whole, which is the second form of it we have examined, seems to me to be radically impossible. We live and move because the whole universe helps us to do so. We know *any* reality because, so far as we do know it, we know all reality. Neither in thought nor in action can we find a 'foot-hold,' a *pied à terre*, except in that which is related to the whole, because it is itself the manifestation of the whole. No preliminary science is either possible or necessary. Epistemologists, instead of standing shivering on the bank asking the futile question whether we can know or not, had better make the plunge. There is no way of learning to swim without going into the water. If they want really to think they must become Metaphysicians.

#### IV.—ON THEORIES OF LIGHT-SENSATION.

By C. L. FRANKLIN.

THE two theories in regard to the sensation produced by light<sup>1</sup> which divide attention at the present time are both thoroughly unsatisfactory. They have, in spite of this fact, together so completely gained possession of the field that time and effort are well spent in setting forth, in plain terms, their weaknesses, and in endeavouring to pave the way for more reasonable conceptions.

Let us consider for a moment what it is that a light-sensation theory has to do. Our knowledge of the nature of the external phenomenon—wave-motion in ether—is highly developed. We are perfectly agreed as to the internal phenomenon—the sensation which the normal human being receives from a given wave-length, and from a given mixture of wave-lengths. We have, moreover, a good idea of the anatomical make-up of that very complicated structure in the back part of the eye, the retina, which, we know, must be the efficient agent in the transformation of light-waves into something capable of being conveyed along the optic nerve and of affecting consciousness as a sensation of light. But as to what it is that takes place in the retina at this momentous moment, we are absolutely in the dark. The function of a light-sensation theory is to make use of the scientific imagination to devise some sort of a process in the retina which shall constitute a reasonable connecting link between these two classes of phenomena—a process, namely, such that it shall plausibly and naturally *result* from the known properties of light, and shall have as its natural and simple *consequences* the known phenomena of light-sensation.

<sup>1</sup>The customary name of the thing of which I am about to speak is "Theory of Colour". That is an adequate designation of the theory of Helmholtz, for that theory supposes that the *sensation white* is nothing but a mixture of the three *colour-sensations*. But it is not at all an adequate designation of the theory of Hering, according to which white is a sensation entirely distinct from a sensation of colour; unless, indeed, one were to maintain that black and white are properly called colours. This would be to make nonsense of the very useful word *colourless*, and it would lead us besides into endless sources of confusion. It is not *colour*, therefore, but *colour plus white* that we need a name for—that is, the entire sensation-quality furnished us by the organ of vision; and to cover this ground there seems to be no other word at hand except *light-sensation*.

As to the actual nature of that process it cannot be too much insisted upon that we have absolutely no knowledge, and that we have no immediate hope of gaining knowledge. In other words, the requirements which a light-sensation theory must meet are, at present, wholly of a *logical* nature, and the proper word for its designation is not theory, but hypothesis. The satisfaction which we should feel in a good hypothesis would be a satisfaction, not of the knowledge-loving, but of the logic-loving part of our emotional nature.

The retinal process which we feel ourselves called upon to feign may be of an electrical nature (we know that, when light falls upon the retina, electrical currents are produced), and it may be of a mechanical nature (Helmholtz' theory originally spoke of vibrations produced in the nerve-ends); a rather good theory by Göller<sup>1</sup> makes use of our knowledge of circularly polarised light; and it may equally well be that the process concerned is of such a kind that it has no counterpart elsewhere in nature, and that we shall never be in a position to comprehend it. But at the present time, the assumption of some sort of photo-chemical process as a basis seems to furnish the most satisfactory results, and it is upon this assumption that the theories of both Helmholtz and Hering are now built up.

What, then, are the respective claims of the theories of Helmholtz and of Hering towards furnishing a logically satisfactory connecting-link between ether-waves and light-sensation? Let us refresh our minds, for a moment, as to the nature of a logically satisfactory theory by considering the theory of the sensation of sound. Here we have, externally, wave-motion, as in the case of light, except that it is wave-motion in a coarser medium and of much slower period. In the ear, we find a structure which is a very good reproduction of a musical instrument. Nothing could be more satisfactory than the supposition that different elements of the basilar membrane vibrate to different musical notes, and convey to the conscious ego the sensations of the musical scale, whether on the principle of local signs, or on some other principle; and this theory has received abundant indirect confirmation. The satisfactoriness of the theory lies in the fact that the aural process assumed is such as to permit a one-to-one correspondence between the external phenomenon-series and the internal sensation-series. For this theory we owe a debt of profound gratitude to the

<sup>1</sup> *Die Analyse der Lichtwellen durch das Auge*. Du Bois-Reymond's *Archiv*, 1884.

incomparable Helmholtz. But has Helmholtz, following Young, been equally happy in his light-sensation theory? Externally, we have a very similar state of things to that which exists in the region of sound, namely, a simple series of vibration-periods. But if we question consciousness, we find something very different in the sensation-scale. For every pure vibration-period there is, as in musical sound, a distinct sensation; but the converse is not true—it is not true that, given the sensation, one can predict the vibration-period—on the contrary, the colour-tone produced by a given vibration-period can, in general, be exactly matched by a large number of *pairs* of vibration-periods, one more and one less rapid than the single one which produces the same result. Moreover, there is a whole series of intermediate sensations between red and blue—the purples—which are produced by no *single* wave-length whatever. The fact that the purples must be mixtures led naturally to the hypothesis that other colour-tones might also be mixtures, and to the assumption of a least sufficient number (three namely) of fundamental sensations, and fundamental retinal processes, out of whose mixtures the whole continuum of colour-sensation might be produced. The colours which are, on very good grounds, assumed as fundamental, are the colours corresponding to the wave-lengths  $\lambda = 470$ ,  $\lambda = 505$ , and a slightly more purplish red than the extreme red of the spectrum. (By a happy chance, Helmholtz and Hering are in close accord in respect to the fundamental red and blue.) So far as this peculiarity of sensation is concerned, the theory of Helmholtz is fully adequate to its explanation, and if our light-sensations had now been fully described, the theory would be, so far, beyond reproach. But that is not the case. Besides all the colour-sensations, including the purples, we have a whole series of sensations which we call colour-less, or grey. (I prefer to extend the ordinary significance of the word *grey*, so as to take in the entire series of black-grey-white sensations. The use of white as the opposite of colour is very misleading; white is the name of the *most intense* of the colourless series.) How does the Helmholtz theory account for the sensation of grey? Helmholtz, as is well known, has been most successful in explaining many of the deliverances of our consciousness to be of the nature of an *illusion of the judgment*. (We think we *see* an object, which we are not looking directly at, to be near and another to be far, when in reality the *sensation* is merely one of distance apart of two double images; but this sensation has been wholly merged into a sign for calling up in memory an idea

of how far we should have to move the arms or the legs to reach that object. Again, we say that a given object feels wet; but an attentive analysis shows us that a feeling of wetness is, in reality, a fusion of feelings of smoothness, softness, and cold, and that its illusory unitary character is due to the fact that these three sensations always occur together when we have otherwise knowledge that water has been poured upon the object. In other words, several sensations which are in reality distinct are, to the inattentive observer, fused into a supposed sensation of wateriness, upon the general principle that our sensations are of interest to us merely as signs of external facts, and that a group of well-known sensations may easily seem to be a new, single sensation, when it has a single and constant cause, or when there is any other reason for the sensation-groups always occurring in conjunction.) It is upon this principle that Helmholtz explains the sensation of grey or white. There is no such sensation, he says; but, just as when red and yellow are present in a certain proportion, we may call the sensation by a new name, *terra cotta*, so when red, blue and green are present in equal amounts—that is, when a given object looks just as red as it looks blue, and just as green as it looks red—then we suddenly jump to the conclusion that we have no coloured object at all before us, but a colour-less or grey object. In reply to this hypothesis, it must be said, in the first place, that however accustomed we may be to calling a certain sensation *terra cotta*, we can never lose the consciousness that the colour in question resembles red and resembles yellow in a sense in which it does not resemble green, for instance; but that the very distinguishing characteristic of the sensation white is that the most attentive observation fails to enable us to detect in it the slightest trace of a resemblance to any colour whatever. In the second place, there is not another single quality that all grey objects have in common, nor is there a common cause to which their greyness may be attributed; and hence it is impossible to assign any *ground* for the extraordinary illusion by which an even red-green-blue sensation seems to us to have wholly lost its redness, greenness, and blueness, and to have acquired a sensation-quality of a totally different kind. If grey objects had a common smell, or a common temperature, it might be conceivable that we should always fuse three distinct sensations into one on their behalf, but that is not the case. What Helmholtz asks us to believe about colour would be paralleled in the region of taste, if it were the case that in every mixture two and two of pepper,

vinegar, and oil, we could plainly taste the elements of the combination, but that when even mixtures of the three substances were offered us, the taste of all three constituents should suddenly vanish, and be replaced by a taste of a totally different kind—say by the taste of mustard.

I maintain that so utterly groundless a hypothesis as this would never have obtained a moment's credence, had it not been that at the time it was proposed the science of the *psychology* of the organs of sense had hardly an existence. From the fact that the *physical cause* of the sensation of grey was nothing but the coincidence of the *physical causes* of the sensations red, green, and blue, nothing was easier than the leap to the conclusion that the *sensation grey* was the *coincidence* of the *sensations* red, green, and blue. But this method of deliberately ignoring the deliverances of consciousness has fallen much out of fashion, and it has recently met with a particularly crushing blow; there is a late incident in the history of science which is of extreme importance for the psychologist, but which has not been sufficiently dwelt upon by him. The common man always stoutly maintained that heat and cold felt to him like two different sensation-qualities, incomparable with each other, and not (like heat by itself or cold by itself) like different intensities of one and the same sensation. But the physicist showed him the evenly rising and falling column of mercury in the thermometer, and kindly explained to him that his poor consciousness was thickly overlaid with judgment-illusions, and with that the common man had to be content. But, in the progress of our knowledge, it was discovered that the common man was right, that is, it was discovered that there is a certain degree of energy of ether-vibrations above which the resulting sensations are conveyed by one set of nerves and below which they are conveyed by a different set of nerves. There is, therefore, no reason for doubting that the physiological processes and, all the more, the conscious sensations of heat and cold are, in reality, distinct. This is a piece of science-history from which the physicist, if he is wise, will learn a much-needed lesson of humility.

But all these theoretical considerations, strong as they are and important as they are for the perfecting of our methods, are not essential to the discrediting of the Helmholtz theory. That theory is already rendered sufficiently improbable by its totally inadequate method of accounting for an important series of facts. On the margin of the retina of every human being, and throughout the retina of the totally colour-blind, there is no sensitiveness to colour whatever, but perfect



sensitiveness to differences of brightness. Moreover, when the illumination is very faint, the normal eye sees even in the fovea no colour, but only different intensities of grey, and the distribution of brightness along the spectrum is exactly the same for the normal eye under these conditions, as for the eye of the colour-blind. There is every reason to suppose that these cases of vision without colour are of the nature of defects—that the eye is, in whole or in part, diseased, or in a less highly developed condition than usual. What explanation of these phenomena is offered by the followers of Helmholtz? They ask us to believe that in these abnormal cases the three distinct *photo-chemical processes* exist in their original integrity, only that they have been so altered as regards their receptivity to the influence of light that every vibration of ether (throughout the visible spectrum), no matter what its period, excites them all in the same degree; that whereas these three powers existed in the first instance merely for the sake of enabling us to distinguish between different parts of the spectrum, they are here, for no conceivable purpose, so altered that every part of the spectrum affects them all three exactly alike. They ask us to believe that all three fundamental *sensations* also exist in their original integrity, and that, while we can no longer see red, green, and blue separately, we can still see them in the mixture which we take to be grey with exactly the same perfection as before. Fick, to whom is usually attributed this so-called explanation of non-colour vision,<sup>1</sup> himself admits that so improbable a conception would not have been hit upon, if a theory were now for the first time to be made up, and it must be remembered that, at the time it was broached, the facts were far less well known than they are now. No cases of monocular colour-blindness, either partial or total, had then been discovered; and such cases are of most critical importance for any theory. The original supposition of the Helmholtzians was that one or the other of the three sorts of fibres was either wanting or paralysed; this had in

<sup>1</sup> Fick's explanation was, in reality, first suggested by Helmholtz, although Helmholtz himself seems to have forgotten the fact. The passage in question occurs in the Nachträge to the first edition of the *Physiological Optics*, p. 848: "Man könnte denken . . . dass die Gestalt der Intensitätscurven, Fig. 119, für die drei Arten lichtempfindlicher Elemente sich änderte, wobei dann eine viel grössere Veränderlichkeit in dem Verhalten der objectiven Farben gegen das Auge eintreten könnte". This goes to confirm the remark which a certain German writer on these subjects says his efforts to gain attention are always met with: "Es steht schon alles in Helmholtz!"

fact already been suggested by Thomas Young.<sup>1</sup> A person who is green-blind ought, upon this supposition, to see in white only its red and blue constituents, and hence white ought to look to him as purple looks to us. As long as his defect made him incapable of explaining to us what he felt, this might perfectly well, for aught we knew, have been the case. But we know now that a person who is green-blind in one eye only, sees white with his defective eye exactly the same as he sees it with his normal eye; hence this explanation can only be retained with the aid of an excessively strong draft upon the illusion-of-judgment doctrine. Nevertheless, Helmholtz himself seems not to have given it up (*Physiol. Optik*, pp. 373, 374, new edition). How it can possibly be made to work for total colour-blindness, I am at a loss to understand; when all three fibres are paralysed (or, as Helmholtz would say now, when all three photo-chemical processes are in abeyance), what remains out of which to make the red-blue-green sensation-mixture which we call white? It is true that total colour-blindness is rare, but it is of critical significance, and cases of it have been thoroughly examined both by König and by Hering. It is a singular fact that Helmholtz, in the new edition of his book, gives the briefest possible mention of total colour-blindness (p. 367), and does not mention (so far as I can find) monocular total colour-blindness at all. And yet, if the frog is God's gift to the physiologist, as Huxley has said, it may with still more confidence be affirmed that the existence of monocular colour-blindness is God's gift to the colour-theorist.

The indispensableness, for any one who thinks upon this subject, of a theory which shall make provision for white as a distinct sensation, has caused the theory proposed by Prof. Hering to have many adherents; and his theory is, in fact, far more adequate to the requirements of the case than is the theory of Helmholtz. But at what a cost does he provide us with a separate process for white! In order to accomplish it, he has attached to chemical processes, which indeed are well known to exist, functions which are absolutely without parallel in the physiological economy. Everywhere else the purposes of life—action, feeling, thought—are subserved by the tearing down of complex chemical structures, and these are afterwards built up by internal forces

<sup>1</sup> "It is much more simple to suppose the absence or paralysis of those fibres of the retina which are calculated to perceive red." Quoted by Helmholtz, *Physiol. Optik*, p. 365, new edition.

for the sake of their future useful destruction. But Hering would have us believe that, of the two halves of the spectrum, one acts constructively upon photo-chemical substance, and the other destructively, and that both actions are alike effective in giving us sensations of colour—that processes so widely dissimilar in their nature as assimilation and dissimilation are not only both the basis of sensations, but of sensations so like in quality as are two adjacent colours of the spectrum. And this is not the only fatal objection to the theory of Hering. Hopeless confusion is introduced into all our conceptions of colour when we are asked to believe that the entire brightness of every sensation of light is nothing but the brightness due to the white sensation which is mixed with it. (This difficulty is not obviated by Hering's later view that colours of one end of the spectrum contribute something to the brightness, and those of the other end take something away from it; for there remain intermediate wave-lengths to which the objection applies in its original force.) Can they be thinking beings who have allowed themselves to follow Hering into the intellectual vagary of supposing that a perfectly saturated red, for instance—that is a red wholly free from white admixture—no matter what the amount of chemical activity which called it forth, would have no brightness whatever, that there would be *nothing* in sensation corresponding to differences in amount of this photo-chemical process?

As Prof. Leber has well said, what people have found attractive in the theory of Hering is the fact that it assigns an independent existence to the sensation of grey, and *not* the character of the physiological processes by which the theory is carried out. Not only are those processes theoretically improbable, but there are also other reasons for not believing in them. Experiments by one of the older physiologists, Bécclard, are at hand, which show that the effect of light of all colours upon the retina is to increase the amount of carbonic acid given off, and hence to increase the amount of dissimilation which takes place. Whether these experiments have been repeated by later investigators or not I have not been able to find out. But it is certain that the forward motion of pigment-matter among the end-members of the rods and cones under the influence of light<sup>1</sup>

<sup>1</sup> See the plates at the end of Angelucci's *Unters. ii. die Sehtätigkeit der Netzhaut u. des Gehirns*. Giessen, 1890. The heliotropic effects recently investigated by Loeb are of the same nature; "die stärker brechbaren Strahlen des uns sichtbaren Sonnenspectrum die heliotropisch wirk-sameren sind, wie bei Pflanzen" (*Künst. Umwandlung der heliotrop. Thiere*,

—a motion which, without any doubt, takes place for protective purposes—becomes gradually more marked for the successive colours from red to blue; that there is no indication of a departure, that is to say, from the steadily injurious effect of all portions of the spectrum. Again, strong light of every colour is painful; but is it conceivable that active recuperation of a sensitive substance should be equally disagreeable to us with its rapid exhaustion? None of these facts would be conclusive, perhaps, if it stood alone, but they are of such a uniform nature that together they are not without weight.

A circumstance which has impressed people favourably with the theory of Hering is the belief that it furnishes an explanation of certain very important phenomena—those of contrast and of after-images. These phenomena the theory of Helmholtz can account for only by the aid of the much-overworked illusions of judgment, which Hering has shown by a large number of most ingenious experiments to be in this instance quite inadequate to doing what is demanded of them. But has Hering *explained* the phenomena of contrast, for instance? We must pause for a moment to consider what an explanation is. It is frequently loosely said that a certain theory furnishes an explanation of a certain phenomenon, when what is meant is merely that it is possible to *express* the phenomenon in the terms of the theory, or, in other words, that the phenomenon admits of being translated into the language of the theory. But it is a simple principle, which needs only to be stated to be accepted, that it is only in case the process which, in the theory, corresponds to the phenomenon is a *necessary*, or, at least, a *probable* consequence of the other assumptions of the theory, that the explanation is of a kind by which the theory is at all confirmed. For example, the belief that the phenomena of simultaneous contrast have been *explained* by the theory of Hering, and that this furnishes a strong confirmation of this theory, is wholly erroneous. Hering has shown, indeed, that contrast is not sufficiently accounted for as an illusion of the judgment, and that it must correspond to *some* physiological process in the visual substance. Since now the processes that underlie vision, in his theory, are assimilation and dissimilation, the physiological process which produces the contrast-effect must necessarily, in any instance, be dissimi-

&c. Pflüger's *Archiv*, Bd. xlv., p. 107). There is no trace here of opposing effects of different colours; as always, the difference is merely a difference of degree.

lation or assimilation, as the case may be. So far, this is the simple *translation* of the phenomenon. We have now to ask ourselves, what is the degree of probability of this process taking place under the given circumstances? After a little patch of retina has been undergoing assimilation or dissimulation under the influence of coloured light, what renders it probable that surrounding portions of the retina should immediately be excited to the performance of the antagonistic process? There is a slight difference between the two cases. When a given portion of the retina is undergoing rapid dissimulation, we have a vague feeling, perhaps, that it may seem a little natural that in the surrounding portions more than the usual amount of building up should be going on (and this is the instance of his explanation, which Hering usually advances). But how is it in the other case? If a given portion of the retina is undergoing a rapid assimilation, does that seem to be a sufficient reason why, all around it, a *tearing down* of the visual substance should immediately begin to take place? The improbability of the process in this case far more than counterbalances its slight probability in the other, and hence we ought to say that the phenomena of contrast admit of being *translated* into the language of the Hering theory, but *not* that they do anything whatever to strengthen that theory, nor that they have been, in the proper sense of the word, explained by it.

But in spite of the difficulties of the theory of Hering, it would, perhaps, be necessary to continue to make use of it as a temporary means of holding together a large and complicated body of facts, provided it were impossible to form any other conception of a separate white-process, consistent with the fact that when certain pairs of colour-sensations act together, all sensation of colour vanishes. The theory of light-sensation which I have proposed<sup>1</sup> is not so much intended as the definitive light-sensation theory, but rather as a symbolic representation of the *kind* of theory which alone can offer us, in the present state of our knowledge, any mental satisfaction. Its principal features are these:—

1. In the earliest stage of its development, the visual sense consisted only in the sensation of grey (if we agree to include in the word *grey* the whole black-grey-white series of sensations). This sensation of grey was brought about by the action upon the retinal nerve-ends of a chemical substance set free by means of the decomposition of a certain kind of

<sup>1</sup> *Zeitschrift f. Psych. u. Physiol. der Sinnesorgane*, Bd. iv., 1892.

molecule, which we shall call, for the sake of brevity, the grey-molecule. This molecule is composed of an outer range of atoms, somewhat loosely attached to a firmer inner core, and having various different periods of vibration. The decomposition of this molecule consists in the tearing off of its outer portion, which then becomes the exciter of the nerve-ends, and the immediate cause of the sensation of grey. This tearing off is brought about by the ether-vibrations of the entire visible part of the spectrum, but in the greatest amount by the vibrations somewhat near its middle part, corresponding to the fact that to the totally colour-blind (and to all eyes when the illumination is faint) the green is the brightest part of the spectrum; in fact, the number of molecules decomposed by the different vibration-periods is naturally assumed to be proportional to the corresponding ordinates in the curve which shows the brightness-distribution in the spectrum of the totally colour-blind.

2. In the course of the development of the colour-sense, some of the grey-molecules become differentiated into colour-molecules, and in the following way: The atoms of the outer range segregate themselves into three different groups, or pairs of groups, at right angles to each other, and having three different average velocities. Then the adaptation between the present structure of the retina (as regards colour) and the constitution of physical light consists in the fact that the mean vibration-periods of the atoms of each group are synchronous with (probably are sub-multiples of) certain vibration-periods of the ether—namely, the vibration-periods of the three fundamental colour-tones. Hence when light of a fundamental colour-tone, say green, falls upon the retina, it will have the effect of tearing off from a large number of molecules those atom-groups whose periodicity is such as to render them peculiarly exposed to its shocks, and hence that special chemical substance will be set free which is the exciter of the sensation of green.

3. When the wave-length of the light which falls upon the retina is anywhere between the wave-lengths of two fundamental colour-tones—blue and green, for instance—then a certain number of molecules lose their blue constituents, and a certain number of molecules lose their green constituents, and the resulting sensation is that of a mixture of blue and green. But this effect is exactly the same as that which is produced when the retina is acted upon by a mixture of pure blue light and pure green light; hence we are incapable of distinguishing in sensation between a single intermediate

wave-length and a mixture in proper amounts of two fundamental wave-lengths.

4. There will be certain mixtures of objective light, however, which will have the property of setting free all three kinds of nerve-exciting substance in equal amounts. But these three substances *are* the chemical constituents of the exciter of the grey sensation ; hence when they are present in the right amount, they recombine to form that substance, and the sensation produced is exactly the same as that caused by the decomposition of the grey molecules.

5. In all of the five cases in which we are incapable of receiving any sensation but that of grey, it is the grey-molecule which, for one reason or another, is alone decomposed. In the very eccentric part of the retina, the differentiation of the colour-molecule out of the grey-molecule has not taken place ; these parts of the retina are chiefly useful to us in warning us of danger from moving insects and other enemies, and for this the power to detect differences of brightness is sufficient. In the case of the congenitally totally colour-blind, the retina is in an atavistic condition,—here, also, the grey-molecules are the only ones which exist. When the portion of the retina affected is very small, or when the illumination is very weak, we may suppose that the colour-molecules are not decomposed in sufficient quantities for their specific character to be detected. When the illumination is very intense, it may be that the colour-molecules have become exhausted sooner than the grey-molecules, or that a strong energy of ether-vibrations affects all of the colour-constituents equally without reference to their periodicity. The important thing in all these cases is the *capacity for independent existence of the substance which excites the sensation of grey.*

6. The explanations which I have just given of the colourlessness of very bright or very faint sensations are merely translations into the language of the theory, and add nothing to its strength. But the case is very different with the explanation which this theory is able to give of after-images and of simultaneous contrast. When red light, say, has fallen for some time upon the retina, a large number of molecules have lost their red-constituents—they have become partly mutilated molecules. But in this condition they are extremely unstable ; they gradually go to pieces completely, and the setting free of their remaining constituents, the blue and the green producing parts of the molecules, causes a sensation of blue-green. The red sensation, therefore, in



case of careful fixation, becomes paler and paler; if the objective illumination is weakened, it may even be overpowered by the blue-green sensation;<sup>1</sup> and if the eyes are closed, the blue-green sensation alone remains, after a few seconds, and continues until the injured molecules have all become completely destroyed. Since, as is well known, the circulation in the retina is extremely rapid, the half-mutilated molecules are, in large numbers, dragged across the border of the original image, and there their complete destruction causes the phenomenon of simultaneous contrast.

These are the explanations which this theory offers of what may be called the critical points of colour-vision. It also furnishes an explanation of the following phenomena, which have not hitherto been explained.

a. The retina contains elements of two sorts, which present a very different appearance—the rods and the cones. It has not hitherto been possible to attribute different functions to these elements; the difficulty of doing this comes from the fact that the cones must be *sufficient* for vision, since they alone occur in the spot where vision is the most acute, while the rods must play *some* important rôle, because they resemble the cones very much in structure, and in the periphery the cones are almost wholly wanting. But if we assume that the cones contain colour-molecules, and hence give us sensations both of colour and of grey, but that the rods contain only the undeveloped grey-molecules, and hence give grey sensations only, the distribution of rods and cones in the retina becomes perfectly comprehensible. Very interesting experiments of Eugen Fick<sup>2</sup> permit us to lay down the following relation between retinal structure and light-sensation for just perceptible excitations.

<sup>1</sup> This occurs in the following slight modification of a most simple and most beautiful experiment of Hering's. Put a bit of bright red paper in a box held vertically in the hand, in such a way that a strong light falls upon the paper. After a few moments' fixation, *turn around*; the paper will now be shadowed by the walls of the box, and the difference in illumination is enough to cause the paper to be spread over with a bright layer of the complementary colour. That is, the after-image of the first bright impression is strong enough to blot out completely the actual red paper, although it is still looked at with open eyes, and in a not faint illumination. To attribute this to a residuum in the self-light of the retina, as Helmholtz must do, is to be utterly oblivious to the relations which ought to hold between the magnitudes of cause and of effect.

<sup>2</sup> Pflüger's *Archiv*, Bd. xlv., 1888.

In the fovea, only cones; maximal colour-sense and non-maximal "grey-sense".

In the next following zones of the retina, a gradually increasing number of rods and diminishing number of cones; an increasing sensitiveness to grey light, and a diminishing sensitiveness to colour.

In the remote retinal zones, almost exclusively rods, and almost no colour-sense.

A better case of the application of the method of concomitant variations it would be difficult to find. The retina of a totally colour-blind person has never yet been examined. If it should turn out that it contained rods only and no cones, that would be a very pretty confirmation of this supposition; but if not, one might still suppose that the cones in this case contained only grey-molecules, and that the atavism consisted in the non-development of molecules and not of retinal elements. It remains to be mentioned that if this distribution of functions of retinal elements is a correct one, then the structure of the eye offers in this respect a perfect analogy with that of the organ of hearing; in the ear also we have apparently a very simple apparatus for conveying sensations of noise only, persisting by the side of a more highly developed apparatus adapted to the discrimination of different vibration-periods of the affecting medium.

$\beta$ . A second phenomenon which this theory explains is the superior saturation of the spectral colours red, green, and blue, and the lesser saturation of yellow and blue-green. The number of molecules decomposed by a given kind of light depends upon the closeness of the coincidence of the vibration-periods. For wave-lengths half way between those of two fundamental colour-tones, this coincidence will be very slight, and hence the number of colour-molecules decomposed will be small. There is therefore only a small amount of colour-sensation to be mixed with the accompanying grey sensation, and the resulting colour-tone is therefore very little saturated. That green is less saturated than the other two fundamental colours is again a necessary consequence of the fact that in this part of the spectrum the amount of grey process reaches its maximum, as is proved by the brightness-curve of the colour-blind and that of the normal eye when the illumination is very faint.

$\gamma$ . But these same considerations lead us to the explanation of a third phenomenon—of the fact, namely, that the sensitiveness of the eye to change of colour per change of wave-length is much greater in the yellow and the blue-green than in any other part of the spectrum: where the

number of colour-molecules decomposed by a given wavelength is relatively small, a given amount of change of wavelength is necessarily the more effective in changing the quality of the sensation.

To resume : the principal points of difference between the theory of light-sensation here proposed and the now commonly accepted theories are the following : While the Young-Helmholtz theory supposes that the judgment picks out all the even red-green-blue *sensations*, and deceives itself into thinking them to be a new sensation, white, this theory assumes an independent retinal process as ground for the sensation of white,—a process which, in early stages of development, existed by itself, but which is of such a nature that the three colour-processes, when they do arise, flow together, and mechanically, inevitably, reproduce the *process* which corresponds to white. After-images and simultaneous contrast, instead of being an affair of the judgment, are due to the gradual complete destruction of molecules whose capacity to exist for a time in a partially decomposed state has made it possible for us to distinguish between the different parts of the visible spectrum. The theory differs from that of Hering, in that it assumes processes which are physiologically conceivable, and allows us to conceive of brightness as the amount per unit of time of the physiological process,—colour-process and white-process being combined in our estimation of the total amount. Moreover, it assumes that two complementary colour-processes unite to produce a certain amount of white-process, and not that they destroy each other, and merely leave behind a white-process which was already present.

This last assumption of Hering's would seem indeed to be distinctly contradicted by the following fact, which is new. If two different greys are composed upon the colour-wheel, one of blue and yellow, and one of red and green, and if they are then made of exactly equal brightness by adding black to that one of them which happens to be the brighter, the two greys ought to be under all circumstances indistinguishable, if it be true that the colour-processes have simply destroyed each other. But they are not indistinguishable. If the objective illumination is made very faint it will appear that the grey composed of red and green has become *very much* brighter than that composed of blue and yellow. It is necessary, under certain circumstances, to add a white sector of 25° to the grey composed of blue and yellow in order to restore the equality in brightness. I was led to the conclusion that this would be the case (after having been long

in search of *some* difference between two differently constituted greys) by a comparison of Prof. König's elaborate measurements of the Purkinje phenomenon in the Helmholtz *Festschrift* (Hamburg and Leipzig, 1891), and upon trying the experiment in his laboratory I found that my prediction was verified. The fact is quite incompatible, so far as I can see, with Hering's theory, as Hering at present conceives it.

My theory is a three-colour theory instead of a four-colour theory. Four colours satisfy the requirements of consciousness somewhat better than three,—yellow does not look exactly like a mixture. But a large number of brilliant observations by Prof. König,<sup>1</sup> carried out by means of a far more accurate apparatus for mixing colours than has been employed by any one else, are incapable of being accounted for except by a three-colour theory. The nature of these observations is not such that their significance can be perceived without close study, and hence it is not surprising that proper weight has not hitherto been attributed to them. On the other hand, the dictum of consciousness as regards the non-mixed character of yellow can be satisfied upon my theory, if we assume, as we readily may, that the first differentiation of the substance of the grey-molecule was into two colour substances, blue and yellow, that the yellow was subsequently separated into red and green, and that when the red and green substances are now produced in equal amounts, they unite to form a definite chemical compound, the exciter of the sensation of yellow, which consequently does not have the appearance of being a mixture. In this way, also, we are able to take account of the observations of Hess, which seem to show that the blue sense and the yellow sense are developed together at a definite distance from the fovea, and that the red sense and the green sense are added to them at another definite and smaller distance. It is therefore possible to take account of the independent character of yellow without giving up the extreme advantages of a three-colour theory.

All theories of light-sensation (with slight exception) suppose the dissociation of chemical molecules. My theory shares with that of Donders the characteristic that it makes use of the conception of a possible *partial* dissociation of molecules. It was while I was engaged, a year ago, in writing an article to show that the theory of Donders was

<sup>1</sup> Sitzungsberichte der Berl. Akad. vom 29 juli, 1886, and *Zeitschrift f. Psych. u. Physiol. der Sinnesorgane*, Bd. iv., Heft 1, 2.

incomparably more efficient in furnishing a reasonable connecting link between external fact and internal sensation than either that of Helmholtz or of Hering, that it suddenly occurred to me that the required task could be accomplished in a yet better way. As the theory of Donders has met with no attention, and as I hope that my own will chance upon a better fate, I do not stop here to point out the differences between his theory and mine; I am content, in the first instance, if either should awaken interest. I have, however, pointed out elsewhere what seems to me to be a fundamental difficulty in his theory (*Proceedings of the Congress of Experimental Psychology*, London, 1892, p. 107). The theory, moreover, is necessarily a four-colour theory, and he was himself so strongly convinced of the necessity of a three-colour theory for the explanation of some of the facts of colour-vision (although the experiments of König above referred to had not at that time been made) that he supplemented his four-process theory in the retina by a three-process theory in the higher centres. The awkwardness of this supposition doubtless did much to prevent his theory from arousing attention. The explanation of selective dissociation by light as a result of synchronism in vibration-periods is not possible to his theory. To Donders, however, is due the credit of having first insisted upon it that the colour-sense is a later addition to an earlier existing light-sense; he shows that in no other way is it easy to account for the remarkable fact that while four per cent. of men are colour-blind, the defect is almost unknown among women.

Lest it should be said, in criticism of my theory, that the existence of such molecules as I here assume can never be established, I mention once more explicitly that they are not so much intended as real molecules, but rather as diagrammatic molecules,—as molecules, that is, which are possessed of such properties as would enable them to carry out the logical requirements of a light-sensation theory. I make no claim to having hit upon *the* process which goes on in the photo-chemical substance, but merely to having described *a* process which might with perfect plausibility *result from* the action of ether-waves upon the retina, and *from which would result* all the facts of light-sensation. More than this no hypothesis, in the present state of our knowledge, can hope to do.

[An important Appendix to this article, criticising the recently published theory of Dr. Ebbinghaus, will appear in the next number of *MIND*, under "Discussions".]

## V.—TIME AND THE HEGELIAN DIALECTIC. (I.)

By J. ELLIS McTAGGART.

ONE of the most interesting and important questions which arise in connexion with Hegel's philosophy is the question of the relation between the succession of the categories in the dialectic and the succession of events in time. Are we to regard the complex and concrete Absolute Idea, in which alone true reality is to be found, as gradually growing up in time by the evolution of one category after another? Or are we to regard the Absolute Idea as existing eternally in its full completeness, and the succession of events in time as something which has no part in any ultimate system of the universe?

The succession of categories in Hegel's Logic is, of course, not primarily a temporal succession. We pass from one to another because the admission of the first as valid logically requires the admission of the second as valid. At the same time there are various reasons for accepting the view that one category succeeds another in time. One of the facts of the universe which requires explanation is the existence of time, and it seems at first sight a simple and satisfactory explanation to account for it by the gradual development of the notion from Pure Being to the Absolute Idea. And Hegel certainly explains history to some extent by bringing the successive events under the successive categories.

Nevertheless, it seems to me that such a view is incompatible with the system. In the first place, the theory that time is an ultimate reality would lead to insoluble difficulties as to the commencement of the process. Secondly, the Absolute Idea must be held to be the presupposition and the logical *prius* of the lower categories. It follows that a theory which makes the appearance of the lower category the presupposition of the appearance of the higher one, cannot fully represent the ultimate reality of the process. And, finally, Hegel's language seems to be decisively on the side of the hypothesis that the Absolute Idea exists eternally in its full perfection, and that the movement from the lower to the higher is reconstruction and not construction.

Let us consider the first of these points. Hegel, of course, maintains that the universe is fully rational. Can we regard as

fully rational a universe in which a process in time is a fundamental reality? The theory before us maintains that the universe starts with a minimum of reality, corresponding only to the category of Pure Being. From this point it develops by the force of the dialectic. Gradually each of the higher categories becomes real, and this gradual evolution of logical completeness makes the process which constitutes the life of the universe. All the facts around us are to be attributed to the gradually developing idea, and when the development is complete, and reality has become an incarnation of the Absolute Idea, then the process will end in perfection. The spirituality of the universe, up till then implicit and partial, will have become complete and explicit. The real will be completely rational, and the rational will be completely real.

On this we must remark, in the first place, that the process in time by which the dialectic develops itself must be regarded as finite, and not as infinite. Neither in experience nor in *a priori* criticism can we find any reason to believe that infinite time really exists, or is anything more than an illegitimate inference from the infinite extensibility of time. Nor, if it did exist, could it form part of an ultimate rational explanation of the universe. An unending regress, whether true or not, is certainly not a solution which meets the demands of reason. More especially is it impossible that it should be accepted as part of an Hegelian theory. For infinite time would be the strongest possible example of the "false infinite" of endless aggregation, which Hegel invariably condemns as a mere mockery of explanation.

And, independently of this, it is clear that an infinite series in time would not be an embodiment of the dialectic. For the dialectic is most emphatically a process with a beginning and an end, and any series which embodies it must have a beginning and an end also. If the dialectic has any truth at all, there can be no steps before Pure Being, nor any steps after the Absolute Idea. The process must commence at a fixed point, and cannot therefore occupy infinite time.

We may take it then that the theory which imagines the dialectic to develop itself gradually regards it as doing so in a limited time. What follows from this hypothesis?

The first difficulty which arises is that every event in time requires a previous event as its cause. How then shall we be able to explain the first event of the complete series. The first term, like all the others, is an event in time, that is, it had a beginning, before which it did not exist. What determined the change which brought it into existence?



Whatever determined it must be itself an event in time, for if it had not a definite place in the time series it could not account for its effect having one. But in this case it will itself need a determining cause, which will also be an event, and we have thus lost our finite series with a definite beginning, and embarked on an infinite series, which cannot, as we have seen, be of any assistance to us in our present purpose.

On the other hand, to deny that the first term of such a series requires a determining cause is impossible. It is perhaps not impossible that our minds should form the conception of something on which other things depend, while it depends itself on nothing. But an event in time could never hold such a place. For an event in time has always before it a time when it was not, and this coming into existence deprives it of the possibility of being self-subsistent. Time, as Hegel expresses it, is that which is outside itself. It has no principle of unity or coherence. It can only be limited by something outside itself. Our finite series in time can only have the definite beginning which it requires by means of further time beyond it. To fix any point in time is to imply the existence of time upon both sides of it. And thus no event in time could be accepted as an ultimate beginning. On the other, hand some such event would have to be accepted as the ultimate beginning, if a finite series were to be accepted as an ultimate explanation.

If we apply this to the particular problem before us we shall find that the theory that the Absolute Idea develops in time lands us in a hopeless difficulty. Let us suppose that all the phenomena of the universe have been accounted for as the manifestations of the gradually developing Idea, and let us suppose that each of these manifestations of the Idea has been shown to be the logical consequence of the existence of the previous manifestation. Then the final and ultimate fact upon which our explanation will depend will be that at the beginning of time the first of the categories—the category of Pure Being—manifested itself in reality. And for this fact itself an external explanation is required. No such explanation, indeed, would be required for the deduction of the universe from the idea of Pure Being. If the system is correct, the categories are so inseparably connected that the existence of one stage in the dialectic process implies the existence of all, and the existence of any reality, again, implies the existence of the categories. The category of Pure Being can thus be deduced from the existence of the universe as a whole, and the existence of the universe as a

whole does not require, as it does not admit, any outside cause. But here, to account for the existence of the universe in time, we have taken as our ultimate fact the realisation of the first category at a particular time. Time is in itself quite empty and indifferent to its content. No possible reason could be given why the process should not have begun a hundred years later than it did, so that we should be at the present moment in the middle of the French Revolution. The only way of fixing an event to a particular time is by connecting it with some other event which happened in a particular time. This would lead here to an infinite regress, and, independently of this, would be impracticable. For, by the hypothesis, the dialectic development was to account for the entire universe, and there can, therefore, be no event outside it to which it can be referred in order that it can be accounted for itself. And yet the question—why it happened now and not at another time—is one which we cannot refrain from asking, since time must be regarded as infinitely extensible.

Various attempts have been made to evade this difficulty. It has been suggested that the temporal process has its root in a timeless state. If we ask what determined the first event, we are referred to the timeless state. If we ask what caused the latter, we are answered that it had no beginning, and consequently required no cause.

But how could a timeless reality be the cause of a succession in time? It could, no doubt, be the cause of everything else in a series of successive events, except of the fact that they did take place in time. But how are we to account for that? No reconciliation and no mediation is possible upon the hypothesis with which we are here dealing. According to some views of the question time might be regarded as nothing but a form assumed by eternity, or time and the timeless might be regarded as forms of a higher reality. But such a view is impossible here. The theory which we are here considering had to explain the fact of a succession in the universe, and did so by making the central principle of the universe to be the realisation of the dialectic in time. The realisation in time, according to this theory, is as much part of the ultimate explanation of the universe as the dialectic itself. By making time ultimate we certainly get rid of the necessity for explaining it. But, on the other hand, we lose the possibility of treating time as a distinction which can be bridged over, or explained away, when we wish to make a connexion between time and the timeless. If time is an ultimate fact, then the distinction

between that which does, and that which does not, happen in time, must be an ultimate distinction; and how are we to make, if this is so, a transition from the one to the other?

So far as a thing is timeless, it cannot change, for with change time comes necessarily. But how can a thing which does not change produce an effect in time? That the effect was produced in time implies that it had a beginning. And if the effect begins, while no beginning can be assigned to the cause, we are left to choose between two alternatives. Either there is something in the effect—that is, the quality of coming about as a change—which is altogether uncaused. Or the timeless reality is only a partial cause, and is determined to act by something which is not timeless. In either case the timeless reality fails to explain the succession in time, and we are no better off than we were before. It would be equally available as an explanation if the process had begun at any point besides the one at which it actually did begin, and a cause which can remain the same while the effect varies is obviously unsatisfactory.

It may be objected in answer to this that, if the dialectic process is the ultimate truth of all change, the point in time at which it is to begin is determined by the nature of the case. For time only exists, when change exists. The changeless would be the timeless. Therefore the beginning of the change must come at the beginning of time, and there can be no question why it should come at one moment rather than another.

This, however, is unsound. Actual time may only have begun with actual change. But possible time stretches back indefinitely beyond this. It is part of the essential nature of time that beyond any given part of it we can imagine a fresh part—indeed we must do so. We cannot conceive time as coming to an end. And with this indefinite stretch of possible time, the question again arises—what determined the timeless to produce change at the point it did, and not in the previous time, which we now regard as possible only, but which would have become actual by the production of change in it? And again there is no reason why the series of actual time should not have been placed later in the series of possible time than it actually was. Actual time begins whenever change begins, and so cannot be regarded as a fixed point by which the beginning of change can be determined. A certain amount of the dialectic process has now been realised in time. Can we give any reason why the amount should not have been greater or less? Yet if no such reason

can be given, the present state of the universe is left unaccounted for by our system.

The difficulty lies in the fact that we are compelled by the nature of time to regard the time series as indefinitely extended, and to regard each member of it as, in itself, exactly like each other member. We may call that part of the series which is not occupied by actual change, possible time, but the very name implies that there is no reason why it should not have been occupied by events, as much as the past which actually is so. And as possible time is indefinite it is indefinitely larger than any finite time. The question we have been discussing will then take the form—why is this particular part of the time series filled with reality rather than any other part? And since, apart from its contents, one moment of time is precisely like another, it would seem that the question is insoluble.

It has sometimes been endeavoured to ignore on general grounds all attempts to show that development throughout a finite period in time cannot be accepted. Time, it has been said, must be either finite or infinite. If we accept the objections to taking finite time as part of our ultimate explanation, it can only be because we are bound to an infinite regress. An infinite regress involves infinite time. But infinite time is impossible—an unreal abstraction, based on the impossibility of limiting the regress in thought. Any argument which involves its real existence is thereby reduced to an absurdity. And since the objections to finite time as part of our ultimate explanation do involve its real existence, we may, it is asserted, safely ignore the objections and accept the principle.

The first objection which we must make to this is that the argument might as well be reversed. If the difficulties in the way of infinite time are to be taken as a reason for ignoring all difficulties in the way of finite time, why should we not make the difficulties in the way of finite time a ground for accepting with equally implicit faith the existence of infinite time?

Nor can we escape by saying that we do know finite time to exist, and that therefore we are entitled to ignore the objections to it, while we accept the objections to infinite time. For we have no more experience of finite time, in the sense in which the phrase is used in this argument, than we have of infinite time. What we meet in experience is a time series, extending indefinitely both before and after our immediate contact with it, out of which we can cut finite portions. But for a theory which makes the develop-

ment of the notion in time part of its ultimate formula, we require a time which is not merely limited in the sense of being cut off from other time, but in the sense of having none before and none after it. Of this we have no more experience than we have of infinite time, and if there are difficulties in the way of both we have no right to prefer the one to the other.

Since either hypothesis as to the extension of time leads us into equal difficulties, our course should surely be not to accept either, but to reject both. Time must be either finite or infinite, we are told. But there is a third alternative. There may be something wrong in our conception of time, or rather, to speak more precisely, there may be something which renders it unfit, in metaphysics, for the ultimate explanation of the universe, however suited it may be to the finite thought of every-day life. If we ask whether time, as a fact, is finite or infinite, we find hopeless difficulties in the way of either answer. Yet if we take time as an ultimate reality, there seems no other alternative. Our only resource is to conclude that time is not an ultimate reality.

This is the same principle which is at work in the dialectic itself. When we find that any category, if we analyse it sufficiently, lands us, in its application to reality, in contradictions, we do not accept one contradictory proposition and reject the other. We conclude the category in question to be an inadequate way of looking at reality, and we try to find a higher conception, which will embrace all the truth of the lower one, while it will avoid the contradictions. This is what we ought, it would seem, to do with the idea of time. If it only presents us with a choice between impossibilities, we must regard it as an inadequate way of looking at the universe. And in this case we cannot accept the development of the dialectic in time as part of our ultimate solution.

Beside these difficulties, which would equally perplex any idealistic system which adopted a time process as an original element, there is another which belongs specially to the dialectic. It appears to be essential to the possibility of a dialectic that the highest term in which the process ends shall be taken as the presupposition of all the lower terms. The passage from category to category must not be taken as an actual advance, producing that which did not previously exist, but as an advance from an abstraction to the concrete whole from which the abstraction was made—demonstrating and rendering explicit what was before only implicit and immediately given, but still only reconstructing and not constructing anything fresh.

This view of Hegel's system becomes inevitable when we consider, on the one hand, that his conclusion is that all that is real is rational, and, on the other hand, that his method consists in proving that each of the lower steps of the dialectic, taken by itself, is not rational. We cannot then ascribe reality to any of these steps, except in so far as they lose their independence and become moments of the Absolute Idea.

We are compelled, according to Hegel, to pass from each thesis and antithesis to their synthesis, by discovering that the thesis and antithesis, while incompatible with one another, nevertheless involve one another. This produces a contradiction, and this contradiction can only be removed by finding a term which reconciles and transcends them.

Now if we suppose that the dialectic process came into existence gradually in time, we must suppose that all the contradictions existed at one time or another independently, and not reconciled, *i.e.*, as contradictions. Indeed, as the time process is still going on, all the reality round us at the present day must consist of unreconciled contradictions.

This would be inconsistent with the law of Contradiction. To say that the world consists of reconciled contradictions would produce no difficulty, for it means nothing more than that it consists of things which appear contradictory when not thoroughly understood. But to say that a contradiction can exist as such would plunge us in utter confusion. All reasoning, Hegel's as much as anybody else's, rests on the law that two contradictory propositions cannot both be true. It would be useless to reason, if, when you had demonstrated your conclusion, it was as true to assert the opposite of that conclusion.

And, again, if contradictory propositions could both be true, the special line of argument which Hegel follows would have lost all its force. We are enabled to pass on from the thesis and antithesis to the synthesis just because a contradiction cannot be true, and the synthesis is the only way out of it. But if contradictions are true, there is no necessity to find a way out of it, and the advance of the dialectic loses all its force. If the contradictions exist at all, there seems no reason that they should not continue to do so. We should not be able to avoid this by saying that they are real, but that their imperfection made them transitory. For the dialectic process, even if we suppose it to take place in time, is not a mere succession in time, but essentially a logical process. Each step has to be proved to follow from those before it by the nature of the latter. It is clear that

it would be impossible, by mere analysis of a logical category, to deduce the conclusion that for some time it could exist independently, but that after that its imperfection would drive it on to another stage.

It is only on the supposition that reality always corresponds to the Absolute Idea, and is not merely approximating to it, that we can meet another difficulty which is propounded by Trendelenburg. Either, he says, the conclusion of the whole process can be obtained by analysis of the original premise, or it can not. The original premise of the whole process is nothing but the validity of the idea of Pure Being. If the whole conclusion can be got from this, we learn nothing new, and the whole dialectic process is futile. If, on the other hand, we introduce anything not obtained from our original premise, we fail in our object—which was to prove that the whole system followed when that premise was once admitted.

The only escape from this difficulty is to be found in realising that though the validity of the lower category is the only explicit admission required for the process, it is not the only material we have before us. Categories are forms of thought which we apply to reality, and which have no meaning except as so applied. And all reality embodies, as it must do to be self-consistent and free from contradictions, the Absolute Idea, although in many cases when we experience reality much of this is only implicit. In all our consciousness, therefore, we have implicit the whole process and result of the dialectic, although in many cases only few categories are explicitly acknowledged to be valid. And it is the conjunction of the explicit partial truth with the reality which implicitly contains the whole truth, which forces the mind on to a more adequate explicit statement.

This is brought out by Mr. Bradley in his *Logic* (book iii. part i. chap. ii., §§ 20 and 21): "An idea prevails that the dialectic method is a sort of experiment with conceptions *in vacuo*. We are supposed to have nothing but one single isolated abstract idea, and this solitary monad then proceeds to multiply by gemination from or by fission of its private substance, or by fetching matter from the impalpable void. But this is a mere caricature, and it comes from confusion between that which the mind has got before it and that which it has within itself. Before the mind there is a single exception, but the whole mind itself, which does not appear, engages in the process, operates on the *datum* and produces the result. The opposition between the real, in that fragmentary character in which the mind possesses it, and the



true reality felt within the mind, is the moving cause of that unrest which sets up the dialectical process." And again: "The whole, which is both sides of this process, rejects the claim of a one-sided *datum*, and supplements it by that other and opposite side which really is implied—so begetting by negation a balanced unity. This path once entered on, the process starts afresh with the whole just reached. But this also is seen to be the one-sided expression of a higher synthesis; and it gives birth to an opposite which co-unites with it into a second whole, a whole which in its turn is degraded into a fragment of truth. So the process goes on till the mind therein implicit finds a product which answers its unconscious idea; and here, having become in its own entirety a *datum* to itself, it rests in the activity which is self-conscious in its object."

If we hold, according to this view, that the dialectic process depends on the relation between the concrete whole and the part of it which has as yet become explicit, it is clear that we cannot regard the concrete whole as produced out of the incomplete and lower category by means of the dialectic process, since the process cannot exist without the whole which is its presupposition.

Hegel's own language appears to me to confirm this theory. There is nothing contrary to it in his attempt in the Philosophy of Religion, the Philosophy of History, and the History of Philosophy to explain various successions of events in time as manifestations of the dialectic. If the dialectic is the key to the universe, then, whenever we do view the universe under the aspect of time, the different categories will appear as manifesting themselves as a process in time. But the fact that they can appear successively, and in time, does not necessarily imply that they came into existence successively, and are fundamentally a time series.

Even in this part of his work, too, Hegel's adherence to the eternal nature of the dialectic becomes evident in a manner all the more significant because it is logically unjustifiable. In several places he seems on the point of saying that all dissatisfaction with the existing state of the universe, and all efforts to reform it, are futile and vain, since reason is already and always the sole reality. The conclusion cannot be fairly drawn from the eternity of the dialectic process. For if we are entitled to hold the universe perfect, the same arguments lead us to consider it also timeless and changeless. Imperfection and progress then may claim to share whatever reality is to be allowed to time and change, and no conclusion can be drawn, such as Hegel

appears at times inclined to suggest, against attempting to make the future an improvement on the past. But the very fact that he has gone too far in his application of the idea that the dialectic is timeless makes it more clear that he did hold that idea.

There are not, I believe, any expressions in the *Logic* which can be fairly taken as suggesting the development of the dialectic. It is true that two successive categories are named Life and Cognition, and that science informs us that Life existed in this world before Cognition. But the names of the categories must be taken as those of the phenomena in which the idea in question shows most clearly, and not as indicating the only form in which the idea can show itself at all. Otherwise we should be led to the impossible result that Notions, Judgments, and Syllogisms existed before Cognition.

The strongest expression of the eternal nature of the process is to be found in the *Encyclopædia* (§ 212, Lecture Note). "Die Vollführung des unendlichen Zwecks ist so nur die Täuschung aufzuheben, als ob er noch nicht vollführt sey. Das Gute, das absolut Gute, vollbringt sich ewig in der Welt, und das Resultat ist, dass es sich an und für sich vollbracht ist und nicht erst auf uns zu warten braucht."

Another important piece of evidence is his treatment of his own maxim: "All that is real is rational". To the objections to this he replies, firstly, by saying that reality does not mean the surface of things, but something deeper behind them. Besides this he admits occasionally, though apparently not always, that contingency has rights within a sphere of its own where reason cannot demand that everything should be explained. But he never tries to meet the attacks made on his principle by drawing a distinction between the irrational reality of the present and the rational reality of the future. Such a distinction would be so natural and obvious, and would, for those who could consistently make use of it, so completely remove the charge of a false optimism about the present, that we can scarcely doubt that Hegel's neglect of it was due to the fact that he saw it to be incompatible with his principles.

Hegel's treatment of time, moreover, confirms this view. For he considers it merely as a stage in the Philosophy of Nature, which is only an application of the Logic. Now if the realisation of the categories of the Logic only took place in time, time would be an element in the universe, correlative with the Logic, and of equal importance in it.

Both would be equal elements in a concrete whole. Neither could be looked on as an application of, or deduction from, the other. But the treatment of time merely as one of the phenomena which result from the realisation of the Logic is incompatible with such a theory as this, and we may fairly conclude that time had not for Hegel this ultimate importance.

We have thus arrived at the conclusion that the dialectic is not for Hegel a process in time, but that the Absolute Idea must be looked on as eternally realised. We are very far, however, from having got rid of our difficulties. We seem, indeed, to be brought to a *reductio ad absurdum*. For if the other theory was incompatible with Hegel, this seems to be incompatible with the facts.

The dialectic process is one from incomplete to complete rationality. If it is eternally fulfilled, then the universe must be completely rational. Now, in the first place, it is certain that the universe is not completely rational for us. We are not able to see everything round us as a manifestation of the Absolute Idea. Even those students of philosophy who believe on general grounds that the Absolute Idea must be manifested in everything are as unable as the rest of us to see how it is manifested in a table or a thunder-storm. We can only explain these things by much lower categories, and we cannot, therefore, explain them completely. Nor are we by any means able to eliminate completely the contingency of the data of sense, without which the categories are void and meaningless, and a universe which contains an ultimately contingent element cannot be held to be completely rational. It would seem, too, that if we are perfectly rational in a perfectly rational universe, there must always be a complete harmony between our desires and our environment. And this, too, is not invariably the case.

But if the universe appears to us not to be perfect, can it be so in reality? Does not the very failure to perceive the perfection destroy it? In the first place, the Absolute Idea, as laid down by Hegel, is one of self-conscious rationality—the Idea to which the Idea itself is “Gegenstand und Objekt” (*Encyclopædia*, § 236). If any part of reality sees anything, except the Absolute Idea, anywhere in reality, this ideal can scarcely be said to have been fulfilled.

And, more generally, if the universe appears to us to be only imperfectly rational, we must be either right or wrong. If we are right, the world is not perfectly rational. But if we are wrong, then it is difficult to see how we can be perfectly rational. And we are part of the world. Thus it

would seem that the very opinion that the world is imperfect must, in one way or another, prove its own truth.

If this is correct, we shall be confronted with a difficulty as hopeless as that which encountered us when we supposed the dialectic to develop itself in time. For these latter were due to our hypothesis being found incompatible with the system, while our present view is untenable because, though a logical development from the system, it appears incompatible with the facts. The result with regard to the first is that we come to the conclusion that the development in time cannot be part of Hegel's philosophy. The result of the second would at first sight seem to be that Hegel's philosophy must be abandoned, since it leads to such untenable conclusions.

We rejected the hypothesis of the development of the Absolute Idea in time upon two grounds. The first was that we had to choose between a false infinite and an uncaused beginning. Each of these hypotheses left something unexplained and contingent, and was consequently incompatible with a system which demanded above all things that the universe should be completely rationalised, and which believed itself to have accomplished its aim. Our second objection was due to the fact that the development of the dialectic at all, upon Hegel's principles, presupposed the existence of its goal, which could not therefore be supposed to be reached for the first time by the process. But our difficulty now is not at all incompatible with the system. It is one which must arise from it, and which must, in some form or another, arise in any system of complete idealism. Every such system must declare that the world is fundamentally rational and righteous throughout, and every such system will be met by the same difficulty. How, if all reality is rational and righteous, are we to explain the irrationality and unrighteousness which are notoriously part of our every-day life? We must now consider the various attempts which have been made to answer this question.

Hegel's answer has been indicated in the passage quoted above from the *Logic* (§ 21). The infinite end is really accomplished eternally. It is only a delusion on our part which makes us suppose otherwise. And the only real progress is the removal of the delusion. The universe is eternally the same, and eternally perfect. The movement is only in our minds. They trace one after another in succession the different categories of the *Logic*, which in reality have no time order, but continually coexist as

elements of the Absolute Idea which transcends and unites them.

This solution can, however, scarcely be accepted, for the reasons given above. How can we account for the delusion that the world is partially irrational, if, as a matter of fact, it is completely rational? How, in particular, can we regard such a delusion as compatible with our own complete rationality?

To this it may be possibly objected that our argument is based on a confusion. That a thought is a delusion need not imply that it, or the being who thinks it, is irrational. Everything which, like a thought, is used as a symbol, can be viewed in two aspects—firstly as a fact, and secondly as representing, as a symbol, some other fact. In the first aspect we say that it is real or unreal; in the second that it is true or false. These two pairs of predicates have no intrinsic connexion. A false judgment is just as really a fact as a true one.

Now the conclusion from the Hegelian dialectic was that whatever was real was rational. We are, therefore, compelled to assert that every thought, and every thinking being, are completely rational—can be explained in a way which gives entire rest and satisfaction to reason. But, it may be said, this is not in the least interfered with by the fact that many real thoughts are defective symbols of the other reality which they profess to represent. The false can be real—indeed, must be—for a thought cannot misrepresent reality unless it is itself real. Till it is real it can do nothing. And if it can be real, why can it not be rational? Indeed we often, in every-day life, and in science, do find the false to be more or less rational. It is as possible to account, psychologically, for the course of thought which brings out an erroneous conclusion as for the course of thought which brings out a correct one. We can explain our failures to arrive at the truth as well as our successes. It would seem then that there is nothing to prevent ourselves and our thoughts being part of a completely rational universe, although our thoughts are in some respects incorrect symbols.

But it must be remembered that the rationality which Hegel requires of the universe is much more than complete determination under the category of cause and effect—a category which the dialectic maintains to be quite insufficient, unless transcended by a higher one. He requires, among other things, the validity of the idea of final cause. And if this is brought in, it is difficult to see how delusions can

exist in a rational world. For a delusion involves a thwarted purpose. If a man makes a mistake, it means that he wishes to know the truth, and that he does not know it. Whether this is the case or not, with regard to simple perception of the facts before us, it cannot be denied that wherever there is a long chain of argument, to which the mind is voluntarily kept attentive, there must be a desire to know the truth. And if this desire is unsuccessful, the universe could not, in Hegel's sense, be completely rational.

This becomes more evident if we look at Hegel's definition of complete rationality, as we find it in the Absolute Idea. The essence of it is that reality is to be conscious of its own rationality. The idea is to be "*Gegenstand und Objekt*" to itself. If this is the case, it follows that the rationality of spirit as an existent object depends upon its being a faithful symbol of the rationality expressed in other manifestations of spirit. The delusion to which Hegel reduces all imperfection will of course prevent its being a faithful symbol of that rationality, and will therefore destroy the rationality itself. In so far as we do not see the perfection of the universe, we are not perfect ourselves. And as we are part of the universe, that too cannot be perfect. And yet its perfection appears to be a necessary consequence of Hegel's position.

## VI.—DISCUSSIONS.

### SURVIVAL OF THE FITTEST AND SENSATION-AREAS.

Mr. Spencer has contributed articles to the *Contemporary Review* (since reprinted by Williams & Norgate) in which he argues that the distribution of the accuracy of local discrimination on the skin is such that it could not result from "natural selection". The authority of Mr. Spencer is so great, and these articles have attracted so much attention, that it seems desirable to offer some criticism from the point of view of Experimental Psychology.

The discovery of Weber is described by Mr. Spencer, but he does not consider the large amount of experimental work which has since been published on the subject.<sup>1</sup> Otherwise he would not regard experiments he has made on the blind and on compositors as original, whereas such were published fifty years ago. Mr. Spencer found the distance between two points which could be discriminated by two blind boys to be one-fourteenth of an inch and by two compositors one-seventeenth of an inch. As a matter of fact a distance one-tenth as great can be discriminated after some practice by those who are neither blind nor compositors. Experiments such as Weber's or Mr. Spencer's are no longer a contribution to experimental psychology. At the same time the details of exact science do not affect Mr. Spencer's argument, as it is admitted by every one that the accuracy of local discrimination on the skin is increased by practice.

Mr. Spencer's argument is, however, to a certain extent based on the incorrect assumption made by him that increased fineness of discrimination in the cases considered depends on "development of nervous structure," "multiplication of fibres," &c. It rests on increased interest and attention, not on any change in the anatomy of the skin. Practice for a few minutes will double the accuracy of discrimination, and practice on one side of the body is carried over to the other. If anything be acquired by use and transmitted to posterity, it is accuracy of discrimination, not anatomical development of nerve-fibres and nerve-endings.

Mr. Spencer adopts Weber's view that the endings of nerve-fibres are spread mosaic-like over the skin, so that when an area supplied by one fibre is touched with two points only one point is felt. This view is quite untenable. According to it, when the areas on the fore-arm are about one inch across, we should expect to feel two points one inch apart as one touch, when they hap-

<sup>1</sup> By Czermak, Volkmann, Vierordt, Kottenkampff and Ullrich, Paulus, Riecker, Hartmann, Teuffel, Klug, Lichtenfels, Brown-Sequard, Suslowa, Alsberg, Funke, Fechner, G. E. Müller, Hall, Goldscheider, and others.



pened to fall on the same area, but when they crossed a boundary and fell on two different areas, they should be felt as two, even though the points might be close together. This, however, is not the case; the points must be equally distant whatever the anatomical arrangement of nerve-fibres. Further, while the touch of two points an inch apart may be fused into one sensation, the motion of a point over the skin for the tenth of an inch is distinguished and its direction known.

We have to do with a psychological fact—the accuracy with which sensations can be localised. Each point of the skin has a “local sign” depending doubtless on anatomical structure. On parts of the body where the structure is tolerably uniform over large areas, as on the back of the trunk, the “local signs” of points near together are much alike, and are easily confused. We do not distinguish any difference in touches even when separated by a considerable distance. On parts of the body, however, where the anatomical structure varies within narrow limits, points close together have different “local signs” and are readily distinguished. If the data given by Mr. Spencer are called to mind, it will be seen that the parts which are most mobile, as the tongue and fingers, have the smallest sensation-areas, whereas the parts which are least mobile, as the breast and back of the trunk, have the largest areas. The distance at which touches are fused depends on the structure and mobility of the parts, rather than on skill acquired by use.

Let us now consider the application of these facts to “natural selection”. Mr. Spencer is willing to “admit that this high perceptive power possessed by the fore-finger end may have arisen by survival of the fittest,” but he thinks the distribution of sensation-areas on other parts of the body, more especially the great sensitiveness of the tip of the tongue, cannot be thus explained. I think there is no peculiar difficulty in this case. It is possible that sensitiveness of the tip of the tongue may be less useful to man than sensitiveness of the finger-tips, but, considering the importance of mastication and speech, it is more useful than sensitiveness in any other part of the body. And Mr. Spencer entirely fails to notice the great importance of sensitiveness of the lips and tongue to the lower mammals. Long before the savage used the finger-tips to make “arrows or fish-hooks,” the mammal used the lips and tongue as a special organ of touch. Its accuracy is very great—a horse will reject the smallest bit of gravel from its peck of oats—and its usefulness in the struggle for existence is surely greater than that of the finger-tips for man. If we compare the sensitiveness of the tongue of the lower mammals with that of their hoofs or paws, we need not wonder that in their descendants the tongue remains more sensitive than the finger-tips. Least of all should Mr. Spencer be surprised, who holds that useless organs are not likely to be eliminated by survival of the fittest, but may on the contrary be developed by use.

Nor is this all. As was stated above, the accuracy of localisation depends on the mobility of the part. For mastication and speech it is highly important for man to have the tongue mobile; and it is mobile to an extraordinary extent—far more so than the fingers. If the sensitiveness of the finger-tips may be developed and maintained by survival of the fittest, so without doubt may mobility of the tongue—whose beginnings are more remote than sensitiveness of the finger-tips. The great sensitiveness of the tongue is amply accounted for by its usefulness to man, its enormous importance to the lower mammals and the mobility of the organ.

While the distribution of sensation-areas on the skin seems to offer no peculiar difficulty to the theory of natural selection, we may welcome a discussion of the adequacy of this doctrine from one of the earliest and ablest advocates of the theory of evolution. I do not, indeed, agree with Mr. Spencer when he argues that variations will not survive, if their usefulness be but slight. A variation, even if of only infinitesimal usefulness, would become established, if it occur with sufficient frequency, and if it be stable—that is, if it tend to survive in the offspring. The theory of natural selection accounts for the survival of the fittest, but its inadequacy is in the circumstance that it does not attempt to account for the origin of the fittest. It is almost a truism to say the fittest will survive. What we need to know is why beneficial variations occur, tending toward more highly differentiated structure, and why these variations are hereditary.

Darwin tells us that variations are due to "chance," but explains that by chance he means causes which are unknown. This is merely a doctrine of nescience. It is, indeed, conceivable that variations are due to chance in the mathematical sense—that is, to the configuration of a molecular system which would result from the action of an indefinitely large number of small causes. But this would not explain the hereditary transmission of variations. It is true that, on the hypothesis of chance, this universe is as likely as any other. If "printer's pye" be set up at random it is as likely to compose Hamlet as any other one combination. But such a theory evidently makes dissolution of the cosmos imminent, and is unsatisfactory to the reason.

The Lamarckian theory—that structure is moulded by the forces of inanimate nature—is an attempt to explain variations; it would not, however, account for their hereditary transmission. Nor as a matter of fact do the forces of nature seem usually to favour the production of useful variations and the differentiation of structure. One of the most eminent of American Neo-Lamarckians recently told the writer that he believed the shape of fish to be due to the pressure of water on their bodies as they swim through it. Now I suppose the water would tend to make the fish more or less the shape of a tear or pear, and fish of sluggish habits are somewhat of this shape—which might result

from action of external pressure or from survival of the fittest. But fish which swim quickly have pointed noses. This is evidently an advantage, and shows how survival of the fittest is more potent than external pressure and the hereditary transmission of acquired structure. Living beings must adjust themselves to the external world, and their survival depends on accomplishing this. But the whole course of organic evolution seems a struggle against the forces of inanimate nature rather than as a result of these.

Whether changes acquired by the individual are hereditary, and if so to what extent, is a question of great interest for ethics no less than for biology. But Mr. Spencer's application of this doctrine to account for the origin of species simply begs the question. He assumes useful variations—whether of structure or habit is immaterial—without attempting to explain their origin. Very curiously, Mr. Spencer thinks that, if his argument from use be not valid, we “may as well avowedly return to the doctrine of special creations”. The theory of the development of species seems entirely adequate as a description of what has taken place, but this need not be confused with the question as to whether survival of the fittest, or the heredity of acquired characteristics, accounts for this development. Darwin's great work is adequate as a description of the “Survival of Species,” but it fails to explain the “Origin of Species”. It is, indeed, unlikely that science will explain why the world is as it is. The development of the animal series on this earth is the consequence of the structure of the star-mist or of a force which moulds it. In either case we are beyond the range of science, and can only believe or hope that the universe tends toward a reasonable end.

J. McKEEN CATTELL.

### IMMEDIATE RESEMBLANCE.

May another word be permitted in reply to Mr. Bradley's second utterance on this subject, as possibly helping to clear up the dispute? My point of view was merely psychological in contending, as I did in my book, for the admission of immediate resemblance as an ultimate category of our perception, and of comparison as an ultimate function of our thought. The doctrine (made so plausible by familiar examples) that all resemblances must be analysable into identities concealed under non-identities, I showed could not be extended to every imaginable case. Mr. Bradley now says that immediate resemblance without identity seems to him 'sheer nonsense,' and that 'to deny the principle of Identity is to destroy the world,' and he challenges me again to 'state the principle' on which I 'object to identity'. To which challenge I can only reply that to Identity as such I have no objection in the world, and am astonished that any one should suspect me of such an irrational aversion. Every act of reasoning, every bit of analysis, proves the practical utility and the psychological necessity of the assumption that identical characters may be 'encapsulated' in different things. But I say that there must be *some* things whose resemblance is *not* based on such discernible and abstractable identity. Now, the identity on which Mr. Bradley himself thinks that the resemblance between all things must be based is no such abstractable identity. It is not separable, it is not even discernible, he says, from difference. It is only one aspect of an integral whole on which you may lay stress for a moment, but if you abstract it, or put it ideally in a box by itself, you make it self-inconsistent, or reduce it to nothing. But an 'identity' thus conceived is so different a thing from the stark self-sameness which 'identity' denotes in logic, that it seems unfortunate to describe it by the same name. The usual English name for that sort of identity between two things which you cannot abstract or distinguish from their difference is their 'resemblance'. So that Mr. Bradley now makes perfectly clear that in seeming to attack Prof. Stumpf's and my doctrine he is but reaffirming it under a changed name. When he insists that every resemblance must have for its inner ground an 'identity' thus complicatedly conceived, he is like a man who should say "every resemblance must have for its inner ground the resemblance itself". Why, such being the case, he should quarrel with me I cannot fathom: for this is exactly the opinion I have myself stood up for in all simple cases. Can it be the word 'simple' which has caused all the trouble?—for I believe that in my book I did heedlessly use the expression 'simple resemblance' in one place. But I never meant thereby to imply that the simplest phenomenon of resemblance might not seem, when contemplated long enough, fairly to curdle and swim with inner complexity, to embody inseparable oppositions, or whatever more of vital mystery any one may find. The simplest ideas, as I meant to use the word simple, begin to look the queerest when gazed at in this

way. But such gazing is a 'metaphysical' occupation, in which we shall all indulge, I am sure, with the greatest profit, when Mr. Bradley's new book comes out. I never meant to go beyond psychology; and on that relatively superficial plane I now confidently greet Mr. Bradley, no longer as the foe which by a mere verbal ambiguity he has seemed, but as a powerful and welcome ally.

WM. JAMES.

I should be glad to accept Prof. James' conclusion that the question between us is about a word. But to me both resemblance and identity, as he advocates them, are mere self-contradictory ideas. Resemblance without identity, and again "stark self-sameness" without difference, seem counterpart pieces of nonsense, nonsense unwarranted either in psychology or logic. And surely Prof. James does deny Identity in the one sense in which I admit it. But with regard to Resemblance I would once more solicit attention to certain points.

Is Prof. James prepared to maintain that where the point of sameness is not explicit it does not exist? Does he hold that in the end we have resemblance, though there is no point in which the things are alike and on which the resemblance is founded? Or, if not, will he explain why this point is not to be called one and the same? Does he teach that in a series you may have degrees of more and less which are more and less of nothing? Or, if not, will he tell us why this one something, of which there are degrees, is not to be called the same? And, when a series is perceived as one, is its unity to lie in resemblance without sameness? And, if so, may we be informed whether there is only one such resemblance or several? And, if there are several, where are we to hold that the unity lies? And, if there is but one such resemblance, will Prof. James say how the serial differences in resemblance remain themselves, so long as through all there may not be any point of sameness? This last question cannot be troublesome to one who has understood and applauded Prof. Stumpf's dialectical exploit. But if the objection is verbal and applies not to "same" and "sameness" but only to "identity" and "identical," may we have that stated?

It is easy to discredit such questions as idle conundrums asked in the interest of some obscure and foolish mysticism. It is easy to disregard them and to stand on inherited dogma. That is all so easy that in the present case I looked for something more interesting. But I leave it to the reader to judge whether these inquiries do not fall within psychology, and whether some answer to them should not be supplied by any satisfactory treatment of psychological principles. I am confident that Prof. James, if he could be induced to deal with these problems, would not fail to throw light on them. He would certainly find that our difference involved much more than the mere meaning of a word.

F. H. BRADLEY.

## VII.—CRITICAL NOTICES.

*La Psychologie des Idées-Forces.* Par ALFRED FOUILLÉE. Paris : F. Alcan, 1893. 2 vols. Pp. xl., 359, 410.

By an idea-force M. Fouillée means a "process indivisibly sensory, emotional and appetitive". He conceives the mental life as consisting throughout in activity directed towards ends, with or without forethought as to the nature of these ends. In the case of psychical process final causes and efficient causes are coincident. All specific contents of consciousness, the whole variety of sensory and intellectual experiences, are specific modes of this all-pervading and persistent *nîsus* in which our very existence as conscious beings consists. According as this *nîsus* is thwarted or furthered by the modifications which it receives in the course of experience, these modifications are agreeably or disagreeably toned. Thus it necessarily tends to maintain and develop pleasing experiences and to get rid of those which are painful. The proposition that pain consists in thwarted striving and the proposition that we strive against pain are different ways of saying the same thing. "The force inherent in all states of consciousness has its ultimate ground in the inseparable union of . . . discernment which is the source of intelligence, and preference which is the source of will. . . . Discernment may be implicit when one term only is present to the mind so that there is no comparison. . . . There exists also an implicit preference, including no comparison. I experience a pain, and I immediately endeavour after its suppression, as is shown by my reactive effort. This requires no reflective comparison of ideas or possible alternatives. . . . There is an unreasoned but active preference in favour of pleasure, and there is at the same time discernment of my actual state."

Every idea or sensation is therefore, according to M. Fouillée, an endeavour thwarted or promoted. He admits that in the mature consciousness the conative and affective aspects of the triple process are sometimes comparatively inconspicuous. But they are never altogether absent. In attitudes of mind which appear most purely cognitive, there is always some kind and degree of impulse and interest, *e.g.*, the disposition to go on thinking about something whatever it may be and so avoid mental vacuity. But even this relative obscurity of the active and emotional consciousness is a comparatively late product of mental evolution. At the outset there is no severance between practical and theoretical interest. Cognition is, to begin with, immediately and entirely subservient to external action for the satisfaction of organic needs. In order to live an organism must

adapt itself to its environment or its environment to itself. In the beginning cognition was merely a means whereby this adaptation was made possible. The disposition to seek truth for its own sake is a subsequent growth. This principle of the priority of practice to theory is everywhere emphasised by M. Fouillée. He uses it as a key to many of the leading problems of psychology. Indeed, it seems to us that he sometimes pushes this line of explanation too far. It sometimes leads him to commit the psychologist's fallacy of transferring his own point of view to the consciousness whose development he is tracing. Because practical endeavour is of supreme importance at the outset of psychological development, M. Fouillée is apt to figure the undeveloped consciousness as concerning itself with its own impulses and its own pleasure and pain, instead of with their objects and occasions.

To complete this account of the theory of idea-forces, we must consider it also on the psychophysical side. M. Fouillée maintains in the most thorough and uncompromising fashion the correlation of mental change and brain change. The force of ideas whereby they determine changes in the organism, and so indirectly in the environment, does not consist in a mechanical action which they exercise on the body. It rather depends on the necessary law which unites each state of consciousness with a corresponding mode of motion within the brain. It is this correlated neural disturbance which gives rise, according to physical laws, to subsequent physical changes. "We do not by any means believe that the idea of firing a pistol, for example, acts on the brain as the finger acts on the trigger. Mechanical effects in space have always, as such other, mechanical effects in space for their antecedents. The idea never intervenes physically so as to make a breach of continuity in the universal mechanism. The motion is already present while sensation and thought are coming into being, and this motion cannot cease; it passes necessarily from one cell to another. If it does not expend itself in exciting other modes of consciousness, it expends itself in setting the muscles in motion. Or, to speak more correctly, these two effects are always simultaneous, but in varying proportions, and this variation in their relative degree determines the distinction between states which are *a potiori* called ideational and those which are *a potiori* called volitional." But M. Fouillée strenuously combats the view that because mechanical effects are always as such traceable to mechanical condition, the psychical side of the total psycho-physical process must be regarded as a mere epiphenomenon. The conceptions of action, effort, tendency, enforcement, and so forth, are, according to him, ultimately derived from the experience of that appetitive activity which constitutes the existence of conscious beings. If we are to use the term "epiphenomenon" there is far better reason for applying it to physical than to conscious process. Not only the brain but the whole of the material world may be regarded as relatively



phenomenal, by comparison with psychical activity—as but the outward and visible sign of an inward psychical reality.

The general point of view, which we have sketched in outline, is applied by M. Fouillée in a thorough-going manner to the whole round of psychological problems. Everywhere the leading idea-force which guides his investigations is the primacy of practical experience as compared with theoretical, and the omnipresence of appetitive activity. The order of treatment is in the main synthetic. The first volume is devoted chiefly to those primitive stages of the mental life in which it is immediately conditioned by sense impressions, and in which its activity consists in muscular reactions in more or less immediate response to these impressions. M. Fouillée endeavours to show that appetitive activity and the movements correlated with it are essentially implicated: (1) in sensation; (2) in sensuous pleasure and pain; (3) in the primitive reactions which constitute the germs of volition. Under the first head, he inquires why among the innumerable physical agencies which environ us, we are sensitive to certain selected groups to the exclusion of the rest. Accepting the biological answer that the selection of special modes of sentience depends on the comparative advantage which the individual derives from them in the struggle for existence, he formulates this explanation from the psychological point of view. Sensation is originally a modification of the appetitive activity which constitutes conscious life, either in the way of advancement or obstruction—pleasure or pain. The evolution of sensations—their gradual differentiation—is determined by felt need, by what Schopenhauer called the “will to live”. It is the relation of sensations to agreeable or disagreeable feeling—to the satisfaction or thwarting of felt needs—and to the corresponding movements of advance or withdrawal, which has determined the selection from all possible modes of sentience of these most advantageous to the individual. As regards the manner in which differences of sensory quality originate, M. Fouillée fully accepts Ward’s theory of a presentation-continuum gradually differentiated. He rejects the theory which would reduce all specific qualities to various combinations of the same elementary unit. On the other hand, he denies that the unique character of a sensory quality and its apparent simplicity are satisfactory evidence that it contains no complexity. “Our most specific sensations of taste are precisely those which are complicated with sensations of touch and smell.” What is said on this question is interesting; but the difficulty of conceiving sensory differences, which no effort of attention can distinguish, is not removed. Ward’s criticism of the doctrine of the relativity of sensations is reproduced with a lucidity which adds to its force. Finally, M. Fouillée insists on the constant and necessary connexion of sensation and motor reaction.

The physiological and psychological causes of pleasure and pain

are next examined. Pleasure is made to depend on efficient psychophysical activity, and pain on the existence of obstructions which render it inefficient and tend to suppress or destroy it. The special conditions of pleasure-pain, such as the relation of wear to repair in nerve-tissue, are brought under this general principle. It is denied that feeling-tone is a function merely of the intensity of sensations as distinguished from their quality. Cogent arguments are brought against the pessimistic theory that pleasure consists in release from pain. Of course this theory is utterly irreconcilable with the position that we are essentially active, and that activity as such is pleasurable, in so far as it is not defeated. The same general thesis is skilfully applied to the refutation of the theory that pain is the sole or the principal factor in mental evolution. At the same time the thesis itself is corroborated in the course of the argument by reference to the facts which support it. The same general point of view is emphasised and developed in opposition to the Herbartian attempt to find the sole conditions of pleasure-pain in the interaction of presentations. M. Fouillée scarcely does justice to the Herbartian doctrine. Herbart reduced both feeling and presentation to modes of the self-preservation of the soul. *Mutatis mutandis*, this self-preserving tendency corresponds to M. Fouillée's appetitive activity. Next arises the vexed question whether pleasure as such or pain as such varies in quality as well as in intensity. "According to us," says M. Fouillée, "there underlies all pleasures, however much they may differ, a kind of fundamental pleasure, which is the pleasure of being alive . . . ; but it does not follow that the existence of this common element, which enables us to compare diverse pleasures by referring them to the root-pleasure of being active, excludes all differences of quality between pleasures." The question is largely one of definition and division. But those who, like Lehmann and Ward, taking the experience of being pleased in its abstract purity, exclude from it all qualitative distinctions as belonging rather to the cognitive consciousness, appear to us to divide more skilfully—to carve where the joints are.

The primitive stages of volition are treated in a very interesting way. M. Fouillée, in agreement with Spencer, regards nascent movement as essential to desire in its primitive form. What Spencer has failed to bring out clearly enough is that the nascent movement has for its counterpart in consciousness "a certain tension, a certain psychical endeavour, the consciousness of an activity which demands exercise, which tends to work itself out and attain completion. . . . Indefinable as the idea of activity may be in virtue of its very simplicity, it is inherent in consciousness. It is implied in the idea of passivity. A felt modification is a felt activity." Desire is the felt tendency of an idea to actualise itself. But though the idea is potent to produce movement, it is impotent to produce sensations directly. It thus gives

rise simultaneously (1) to a lively sense of power to actualise movements, (2) a lively sense of impotence to actualise sensations: the result is sense of power arrested and checked, with consequent effort and pain. The idea thus tends, by means of movement, to become sensation, to acquire that supreme intensity which attaches to actuality. The first germs of volition consist, according to M. Fouillée, in indefinite appetitive movements preceding definite appetitive movements. In tracing the mode in which this indefinite mobility becomes differentiated and confined to definite channels he follows Ward.

Passing over the interesting discussion of the emotions and of their expression, we come to bk. iii., which treats of memory and its relation to conation and movement. M. Fouillée first discusses the mechanical basis of memory. He begins by laying down two very dubious propositions: (1) that every idea includes an image which is a faint revival of sensation; (2) that the revival is localised in the same parts of the brain as the original impression. He then proceeds to discuss the competing hypotheses which respectively seek the physiological explanation of retentiveness in the persistence of molecular vibration, of structural modifications, and of functional dispositions. In regard to the problem of the survival of ideas, he claims to be more of a "mécaniste" than the most convinced advocates of mechanism. At the same time he endeavours to show that mechanical explanations represent only one side of the case, and that by no means the most essential. His own interest is mainly in the "mental aspect" of the process. "When we pass to the psychological point of view, we can no longer say with Maudsley that the face disfigured by small-pox remembers the virus." Here, as everywhere, M. Fouillée emphasises the importance of appetitive activity. He is willing to admit that in the case of after-sensations, recurrent sensations, and hallucinations we are relatively passive. But when we pass from these to consider the retention of the primary memory image, we find that our own activity plays a prominent and essential part in the process. "The mnemonic image depends predominantly on the attention given to it. . . . If this attention has a sufficient intensity, the image of even a faint impression may be renewed and retained for a long time. Apart from attention, the image even of a faint impression soon disappears. The mnemonic image is not therefore the passive residuum of the impression. It is a combination of the residua of the impression with the residua of the cerebral and mental reaction." The treatment of the laws of association is on similar lines. James' account of the brain process involved is reproduced with full approval. But the correlated mental aspect is also brought out, though not perhaps so fully as we might expect. Stress is laid on the controlling influence of the general direction of mental activity and general emotional state on the course taken by the ideal train. The association of ideas is

said to have for its presupposition the association by analogy and by contrast of emotional states and of active tendencies. Here there appears to be a clear abuse of language. A dominant impulse such as hate may, as M. Fouillée says, awaken secondary impulses having a similar direction, such as anger, resentment, and desire for vengeance. But it does not do so by association. Still less is this the case when the transition from one emotional and active disposition to another depends on contrast. M. Fouillée further refers to the part played by intellectual activity in the original synthesis on which subsequent associative reproduction depends. He scarcely seems to us to attach enough importance to this point. Reference might have been made to the extremely valuable observations of hypnotised subjects and hysterical patients recorded by Janet, which clearly show that the power of forming new ideal combination is strictly limited by the power of attending.

Reproduction, as M. Fouillée clearly shows, is not identical with recognition: it is not even always coincident with it. M. Fouillée's account of recognition is somewhat elaborate and difficult to grasp. But the essence of it may be stated as follows. At the outset of mental development, the feeling of recognition was implicit in the satisfaction of appetite; the infant at the breast with each successive draught of milk "feels the coincidence of the new sensation with the image of the past sensation: his imagination fills itself, so to speak, in the same manner as his mouth; we may say that he thus *recognises* the pleasure already felt and the milk already imbibed. In more advanced stages of development recognition . . . extends to more indifferent objects, but it always retains this active element of an energy easily expended, which *comes* and *goes* from one term to another without check or shock of collision." It must be noted that a necessary condition of the perception of identity is the intervening difference, the partial cessation or fading of the previous sensation. Non-recognition or the experience of difference is implicit in disappointed appetite, as recognition is implicit in appetite fulfilled. Thus, if for any reason while the child is sucking the milk fails to come, he feels the discrepancy between the fading after-sensation, or "image," which he strives to maintain, and the new experience. M. Fouillée is aware that what is here described is a mere experience of resemblance or difference, and not an idea or perception. But he maintains that when this merely felt resemblance or difference is sufficiently "reinforced" by repetition and concentration, so that it acquires a certain salience or prominence within the total experiences in which it is embedded, it is *eo ipso* transformed into a perception or idea of difference or resemblance. At this point we fail to follow him. He assigns correctly enough the conditions under which the mere experience passes into an idea. But he refuses to see that the advent of the idea is the advent of an entirely

new and irreducible mode of being conscious. This new mode of consciousness consists in the objective reference whereby, as Mr. Bradley would say, part of the content of immediate experience becomes "referred away from itself and made adjectival to something else". The object of an idea, whether it be mental or physical, a quality, a thing, or a relation, is never wholly identical with any immediate experience of the subject who thinks of the object at the moment in which he thinks of it. Immediate experience is coincident with the momentary consciousness, but the essence of thought is reference beyond the momentary consciousness. I may think of a momentary modification of my consciousness as an occurrence in my mental history, an incident in my experience. But neither my experience as a whole, nor the position and relations of any part within that whole, can be given as the content of momentary consciousness. Again, I may think of the quality of an immediate experience abstracting from the fact that it is experienced. In this case also I am obviously not thinking merely of the momentary appearance at the moment in which it appears. The ideal content is regarded as something which remains identical through the fleeting moments of its appearance. We have dwelt on this point because it constitutes our chief disagreement with M. Fouillée's treatment of the process of mental development. We cordially admit that relations may be merely felt just as sensory qualities may; though we should say that, as far as regards the feeling consciousness in distinction from the consciousness of the psychologist, the application of the terms *relation* and *quality* is proleptic. We agree also that perception and ideas arise at the outset in connexion with the practical experiences described by M. Fouillée. But we insist that the transition from mere feeling to idea involves a radically new mode of being conscious. On the other hand, we are at one with M. Fouillée in his opposition to the Platonisers, who require the intervention of a "pure spirit" for the perception of relations. What we demand is the recognition of thought as a distinct mental function, having its distinctive cerebral counterpart in the action, let us say, of a "higher level centre". M. Fouillée brings his first volume to a close by a detailed and successful attempt to show that the higher forms of intellectual process, generalisation, judgment and reasoning, are also forms of appetition. General notions are general tendencies to action. To formulate a new idea in consciousness is to acquire a new mode and direction of activity. We have not space to dwell at any length on the contents of the second volume. It treats mainly of the origin and influence of the "principal idea-forces," and of the nature and development of the will. Under the first head are discussed the genesis of the ideas of the external world, of space, of the self, and of time, the origin and operation of the principles of identity and of sufficient reason, and so forth. The central principle of the explanation of the growth of the idea of an ex-

ternal world is the antithesis between our own activity and passivity. Fouillée's treatment of this topic, as of all the others, is luminous and instructive. In dealing with the space-question, he follows in the main in the footsteps of Ward and James. His most distinctive contribution to the subject lies in the way in which he brings out the fundamental importance of the extensity of organic sensations. The most noteworthy and valuable feature in the chapter on the self is the stress which is laid on the importance of the idea of self, when once it has become distinctly formulated in consciousness, as a factor in the subsequent evolution of the mental life.

The account of the time-perception is especially good. M. Fouillée's point of departure is the thesis that process and transition in consciousness, just because it takes place in consciousness, is itself a mode of consciousness. Of course he does not mean that changing experience involves the idea of change; but only that it involves the feeling of time-transience, which is the basis of the idea. A man falling from a balloon may have the distinctive feeling of falling without having the corresponding idea of his own motion. Not only is the process of experience, *eo ipso*, experienced process, but within this primitive experience, present, past, and future are already differentiated for the merely feeling consciousness. Here, as elsewhere, the clue is found in the conception of appetitive activity. The distinctive characteristic of the present is a sense of actuality, a felt adequacy of consciousness to its object, which may be negatively defined as the absence of the sense of deficiency. Attention is endeavour towards the maximum completeness, distinctness, and vividness of presentation. So far as this endeavour meets fulfilment, so far as it passes from felt striving and felt shortcoming into felt fruition, we have the experience of the present, which coincides with that of the actual. What in immediate experience corresponds to the idea of the future is the feeling of deficiency which attention constantly tends to remove. In the case of the past there is also a felt shortcoming, but its relation to attention is different. Our appetitive activity is turned towards the future and from the past. Hence in the experience of pastness the tendency to make good the felt shortcoming is absent. "An animal strives to detain its prey which is on the point of escaping from its clutches: this is the future. It lets the prey slip and no longer holds it: this is the past. It seizes it again and devours it: this is the present." The apperception of these immediate experiences in their distinction and interconnexion yields the germinal idea of temporal succession; and, according to M. Fouillée, the work of apperception is to "distinguish and separate details previously lost or merged in a mass, owing to their insufficient intensity". We must here again desiderate a recognition of thought as objective reference, irreducible to mere intensification. It would be interesting to follow M. Fouillée in his further account of the development of

the idea of time. But limits of space forbid more than a brief indication of his general position.

The principles of identity and of sufficient reason are traced to their psychological beginning in practical activity. We find difficulty in following the account of the principle of identity. Fouillée appears to derive it, in the first instance, from reflexion on our own volitional activity. "The essence of will is to posit itself in face of other things which oppose it, and in positing itself to affirm itself. . . . Contradiction is excluded from volition. What I will, I will—*i.e.*, being and well-being." We are by no means sure that we understand. But perhaps it is relevant to object, that if we could identify A with Not-A in thought, there would be no difficulty in willing them both in the same act.

The analysis of voluntary action and the account of the growth of will are excellent and very full. Two chapters are devoted to a vindication of the existence of Will. In view of the theorising of such "presentationists" as Münsterberg, these chapters are by no means superfluous. In defining the distinctive nature of voluntary action, M. Fouillée rejects as inadequate the doctrines which explain the will (*a*) as the tendency of an image to realise itself, or (*b*) as determination by judgments and ideas. "The will is not determination by any judgment; it is determination by a judgment which pronounces that the realisation on an end depends on our own causality. It is not merely the tendency of any idea to its own realisation. It is the *tendency of the idea of personal activity to its own realisation*." The treatment of the freedom of the will will be in the main familiar to readers of M. Fouillée's previous writings. Especial stress is laid on the progressive realisation of the idea of freedom.<sup>1</sup> The book concludes with a discussion of the alterations and transformations of consciousness and of will, which contain some interesting matter, chiefly relating to the hypnotic state.

We find ourselves in such cordial agreement with M. Fouillée's general point of view, and with his opinion on many disputed questions, that we are perhaps scarcely in a position to pronounce an impartial judgment on the value of his work. But we can at least say with assurance that all psychologists ought to read it, and that those who do so will be fully repaid. It is full of fresh and interesting matter from beginning to end.

EDITOR.

<sup>1</sup> For a full analysis of these chapters see notice of the numbers of the *Revue Philosophique* in which they first appeared. *MIND*, N.S., No. 5, pp. 137-39.



*Philosophy and Political Economy in some of their Historical Relations.* By JAMES BONAR, M.A., LL.D. (The Library of Philosophy, edited by J. H. Muirhead, M.A.) London: Swan Sonnenschein & Co., 1893. Pp. xvi., 410.

A history of opinion is apt to prove dull reading. The works of which it treats may be divided into two classes: those which the reader has already studied, and those which he has not. An abridgment of the former class often presents no new idea; of the latter class, no distinct idea.

Mr. Bonar's work is free from these defects. He imparts novelty to old doctrines by tracing unexpected affiliations between them. In the most familiar regions he finds new paths. The following are examples of the species of *recherche* reference to which we allude. Mr. Bonar produces evidence that Bentham had adopted, instead of the formula "greatest happiness of the greatest number," the simpler and more intelligible "greatest happiness". It appears that Perronet Thomson claims the honour of having converted Bentham to the change (Bonar, p. 227). Moreover, there is adduced new evidence in favour of the genuineness of the *Deontology* in which the simpler formula is given (*ibid.*). It may not be generally known that the most important corollary of the greatest happiness principle, equality, had been anticipated by Hume: "No one can doubt but such an equality is most suitable to human nature and diminishes much less from the happiness of the rich than it adds to that of the poor". We derive the quotation from Mr. Bonar (p. 117). It will surprise many readers to learn that Bentham was an advocate of female suffrage. Mr. Bonar refers to two passages in the *Reform Catechism*, which J. S. Mill may seem to have overlooked. Mr. Bonar also corrects Mill for attributing to his father the observation that man's action on natural objects is confined to *moving* them (Bonar, p. 249). The reflexion is traceable to Bacon. Mr. Bonar's references to the ancient classics are particularly instructive. Thus he cites from Xenophon a striking passage relating to division of labour, which, though it has been referred to by one or two previous writers, is probably new to most economists:—

In small cities the man that makes beds may make doors, ploughs and tables, and perhaps houses. . . . But in great cities, because there is a large demand for each article, a single craft is enough for a living, or sometimes indeed no more than a single branch of a craft;—we find one man making men's boots only; and another, women's only; and another cobbling or cutting out merely. . . . The smaller the work the greater the skill in the craftsman (Bonar, p. 31).

Even where the honour of a literary discovery cannot be claimed for Mr. Bonar, he has still the merit of imparting freshness to familiar works by his description of them. His chapter on J. S. Mill may be ranked with F. Lange's *Ansichten* among

the few commentaries which facilitate the comprehension of the classical *Principles of Political Economy*. We venture to regard Mr. Bonar's account of Hume's Utilitarian Ethics (p. 108) as conveying a much more accurate impression than one who is regarded as a high authority on the subject, T. H. Green, has done when he complains that Hume left "nothing of that which is lovely or of good report to the saint or statesman but what they share with the dandy or diner-out"; and speaks of "the avowed insufficiency of [his] moral theory to explain any motive beyond that of respectability" (Introduction to the moral part of Hume's *Treatise*, § 48 and § 54). The sentiment of benevolence, the pleasures of sympathy, which form the mainspring of the Humian Ethics, are much more fairly described by Mr. Bonar.

In following Mr. Bonar's interesting comments the reader will do well to refer concurrently to the original writers. Here, however, a little difficulty occurs—Mr. Bonar generally refers to an early edition. But it is not every one who has the first edition of the *Wealth of Nations*, or even the sixth edition, within reach. Green and Grose's edition of Hume is in more hands than the first edition of the *Treatise* and the collection of Essays published in 1768, to which Mr. Bonar usually refers. In some cases, perhaps, this difficulty might be overcome by establishing an equation between the corresponding pages of different editions, as thus: the *n*th page in the familiar edition corresponds in the classical edition to a number which is a certain function of *n*.

Having tested Mr. Bonar's accuracy of interpretation in the case of authors with whom we are acquainted, we are justified in inferring a similar fidelity with respect to those whom we have not seen. In the latter case we have direct experience of a quality almost as necessary to the literary historian as fidelity, namely, the power of vividly presenting the views of others, in their absence so to speak, when they cannot speak for themselves—to readers who are not conversant with the originals. The writer's double faculty of faithful and intelligible interpretation is likely to be of great service to the economic specialist who has not leisure or inclination to peruse the works of all the philosophers who have touched on Political Economy. In this respect Mr. Bonar's chapters dealing with the German philosophers will be particularly useful to the English economist. Instruction is to be derived from Fichte's clear, though absurd, conception of a Utopia "closed" against foreign commerce; and from his measure of value, namely, the time during which a thing would enable us to live.

The value of oysters, for example, is estimated by the time a man could live on a certain quantity of oysters as compared with a similar quantity of bread. . . . A pound of meat is of more value than a pound of bread, because it gives more nourishment and enables a man to live by it for a longer time.

We have derived less benefit from the exposition of Hegel's views. Still the fact that there is little here for the hard-headed economist to fasten on is itself a negative fact of great importance. It is expedient that one should suffer; and Mr. Bonar's laborious analysis of the *Rechtsphilosophie* will have spared much disappointing trouble to many economic students.

We should do injustice to Mr. Bonar's work if we treated it as merely historical. It contains also original contributions to speculation on Philosophy and Political Economy. Of these, the most noteworthy, as it appears to us, are those which relate to the theory of Natural Rights and to the principle of Utility.

Mr. Bonar devotes a chapter to "Natural Rights and Law of Nature," and leads up to the subject in a series of chapters. He asks the question "if there are not certain rights which are essential to the life of men, as reasonable beings, in whatever society they are, and which may therefore be called in a special sense natural or at least fundamental—such as the 'right to live,' the 'right to work' and the 'right to have leisure'". He appears strongly inclined to answer this question in the affirmative. But he admits: "When our forefathers talked of natural rights there was a truth in the conception conveyed by their words, but it is a truth perhaps more safely and clearly expressed now-a-days in some other way". One way, it might be suggested, is—without erecting natural right as a standard distinct from utility—to attribute an eminent degree of utility to the concession of the three claims which Mr. Bonar has so well stated.

But we are not countenanced by Mr. Bonar in the use of Utilitarian phraseology. On the contrary, he makes a vigorous attack on Utilitarianism, with which the adherents of that doctrine will have to reckon. He disputes the importance of the principle of utility, as applied both to Political Economy and Morals. In his view both applications of the principle involve certain propositions which are erroneous (p. 218 *et seq.*).

(1) "The two bodies of doctrine seemed to agree in being directly related to palpable and tangible, or (to put it more bluntly) mundane and materialistic aims." (2) "To both the body politic is a *fictitious body*, composed of individual persons who are considered as constituting as it were its members" [quoted from Bentham]. (3) Both lay "emphasis on the deliberate calculation of means to ends, as opposed to action from habit or instinct". (4) "The notion of an indefinite sum of satisfactions"—that "the desires of human beings are unlimited" (p. 222)—"is common to both". (5) "The calculus of pleasures and pains which is so striking a feature of Bentham's Utilitarianism has been turned to account in the exposition of the economical notion of final utility in relation to value." (6) "Finally (especially by recent writers of the School of Final Utility) the absolutely individual character of economic judgments is asserted in the same way as the absolutely individual character of the hedonistic by the older Utilitarians. The individual is not only the best but the only judge of his own interests as of his own pleasures."

Confining ourselves at first to the purely economic issue, we should maintain that some of these propositions are not held by economists (of the Final Utility School), and that others are very tenable. To fix the ideas, let us take any concrete example. The first that occurs to us is one suggested by the holiday season—expenditure on a tour in Switzerland. Suppose a person to have set apart a certain sum for such a purpose. In shaping his plans he may include in the programme some first-rate ascents. But, informed by past experience, he will take account of the high fees required by guides, and of the fact that the second or third ascent of the season is apt not to be attended with the same sense of novelty and exhilaration as the first. Unless our holiday-maker has the peculiar temperament of the professional Alpinist, an equilibrium will soon be established between the pride and pleasure of ascents on the one hand and the expense and perhaps fatigue on the other. He will not spend all his *viaticum* on the ascent of *aiguilles*, but will apply a portion to less arduous, perhaps more intellectual, modes of amusement.

To any such case the conceptions of the mathematical economist appear more appropriate than Mr. Bonar's philosophy. Mr. Bonar says (with reference to his fifth proposition, above enumerated):—

All that mathematical economics needs to assume is that a material quantity of goods will be in a certain proportion to a greater or less strength of motive; whether the motive be taken as pleasure, or not, is not essential.

No; we submit mathematical economics needs to assume, and is justified in assuming, a psychical quantity or sum which is capable of being maximised by the adjustment of external means. The analogy between physical and economic equilibrium, as each a position of maximum, is lost sight of by Mr. Bonar.

If we go on to consider some of the other objections, with reference to the particular case which has been imagined, we shall be at a loss to discover their pertinence. Is it, or need it be, assumed by economists that "the individual is the best judge of his own interest"? (above, prop. 6). Our pleasure-hunter may have made a mistake in the number of his ascents. If he had done one more, he might have found a gold mine; if he had done one less, he might have escaped an accident. But how do these possibilities affect the appropriateness of the general conception which we have indicated?

Nor in such a case as we have supposed does it seem very pertinent to insist (prop. 4) that "the desires of human beings are unlimited". To say that they are limited by the sacrifice incident to their gratification would not be incorrect. Mr. Bonar himself, referring to the proposition in question, contends that "it is not true" "of any individual man" that "there is no end to the variety of goods that will be desired" (p. 222). But *quis negavit*?

In like manner, with respect to the remaining propositions we should undertake to show that they were either tenable or not held by economists. And if we extend our observation to the opposite side of the counter, so to speak, and consider the motives by which the other party to the transaction, our traveller's guide, is actuated—whether in embarking on his profession, or engaging in any particular task—we shall be confirmed in our conviction that the conceptions prevalent among the mathematical economists are appropriate to the process by which economic equilibrium is reached and price determined.

Considering next the objections as directed against the principle of utility in Ethics, we may ask first: Is it true that Utilitarianism is "directly related to palpable and tangible . . . and materialistic aims"? Might not Napoleon have been a pure egoist, and yet have indulged

La procellosa e trepida  
Gioia d'un gran disegno?

And even admitting that there may be some connexion, in fact though not in logic, between egoism and gross desires, can this be even plausibly asserted with respect to the more genial form of Utilitarianism which takes the happiness of all sentient as its end? It may be alleged, indeed, that the remark in question occurring in the chapter on Bentham is directed only against him and his primitive form of Utilitarianism. In that case the contention may be historically just; but it is of merely antiquarian interest to a generation of Utilitarians who have been bred upon the *Methods of Ethics*.

The objection that the aims of the Utilitarian are "palpable" and "materialistic" is itself at any rate tangible. But with respect to other objections there is some difficulty in seeing where the difficulty is. This remark is specially applicable to certain arguments which recall Green's objections against Utilitarianism. Of such are the following:—

Nor does it make matters clearer to suppose that the motive is always the greatest ultimate, and not the greatest immediate amount of pleasure. The ultimate sum, so long as still in the future, is not a pleasure but only the idea or anticipation of one; moreover, if the wants of man are really infinite, it is an idea that can never be realised (p. 226). . . . If the end be a future sum of pleasures, there is in that a general notion of the permanent possibility of satisfaction, for a being that is thereby supposed capable of something beyond mere pleasures and pains, for in a mere feeling there is nothing permanent and nothing general (p. 227).

We venture to think that these speculative difficulties disappear when we deal with concrete cases occurring in practice, such as that which we have put above. A person intending to expend money on a tour to the greatest advantage either for himself or his party need not trouble himself in the least about

the permanent element of feeling. These metaphysical difficulties about the operation of motives concern the traveller no more than the Eleatic ἀπορία about the possibility of motion concern his guide. This will be admitted with respect to a particular tour. Is it not also admissible with respect to the arrangement of one's course of life?

Mr. Bonar's own common-sense seems to revolt against Green's teaching when he allows that "the idea of a maximum of happiness seems quite an intelligible one, whatever else we may think of it" (p. 225, *note*). Perhaps the further pursuit of the matter-of-fact study in which he has already won high distinction, the English School of Political Economy, may dispel his metaphysical scruples. Meantime, the fact that so solid an intellect refuses to accept the principle of Utility, either in Political Economy or Moral Philosophy, is certainly calculated to give pause to the candid Utilitarian.

F. Y. EDGEWORTH.

*Sociologia Criminale*. Terza Edizione. ENRICO FERRI, Professore di Diritto penale nell'Università di Pisa. Torino: Fratelli Bocca. Pp. 848.

This important volume is intended to serve as an introduction to the biological and sociological study of criminality, and we cordially congratulate Prof. Ferri on the admirable manner in which his book fulfils the purpose he has in view. The need for the study of criminal phenomena on methodical lines and in accordance with experimental methods has arisen in consequence of the failure of the theories of Beccaria and Howard. These theories, as Prof. Ferri tells us, were started with the object of diminishing the severity of sentences and of alleviating the lot of convicted offenders. In the course of the present century this object has been accomplished: prison administration has been transformed in every civilised community, and the ancient ferocity of the penal law has almost entirely disappeared. In other words, penal justice has been brought more into harmony with the ordinary sentiments of humanity. In so far as Howard and Beccaria were aiming at this object, their labours and the labours of their disciples have been crowned with success; but in so far as they were aiming not merely at diminishing punishment but at diminishing crime it must be confessed that their efforts have signally failed. To diminish punishment is one thing, to diminish crime is another. The first is easy, and is achieved by the simple expedient of mitigating sentences and prison treatment, but the second, the diminution of crime, is a task of the most extreme complexity and can only be accomplished after an accurate survey of the conditions which produce the delinquent. It is the function of criminal sociology to inquire into these conditions and to base the principles of penal philosophy upon the results of this examination.

According to Prof. Ferri the prevailing school of penal philosophy proceeds upon the theory that the criminal is gifted with the same ideas and feelings as other men; that the chief effect of punishment is to prevent the increase of crime; that man possesses free will and is morally responsible for his conduct. In opposition to these principles Prof. Ferri contends in the first place that the criminal in consequence of organic and psychic anomalies either inherited or acquired is a special variety of the human race. In the second place he contends that crimes originate, increase, diminish and disappear as a result of causes which have nothing to do with the punishments laid down in penal codes and applied by judges. And in the third place he maintains that the doctrine of free will is a subjective illusion.

In the first chapter of his book Prof. Ferri proceeds to develop and defend the thesis that the criminal is abnormally constituted both in body and mind. The skulls of thieves and assassins, the two most typical classes of criminals, exhibit a higher percentage of atavistic and pathological anomalies than the skulls of ordinary men. An examination of the criminal brain also shows that there is an exceptional frequency of pathological conditions, as well as decided signs of morphological and histological inferiority. In physiognomy the criminal also differs considerably from the average man. Experiments with the sphygmograph show that he is less sensitive to pain than persons of the same social class. Putting all these facts together the conclusion is arrived at that the criminal in bodily constitution is an abnormal product. But there is an intimate co-relation between body and mind, and an examination of the mental condition of the criminal population suffices to show that a very large proportion of the criminal classes is mentally as well as physically anomalous. The most striking of these anomalies is moral insensibility. This state of moral insensibility exhibits itself in an absence of repugnance to the idea of crime or to the commission of crime, and an absence of remorse after the perpetration of the criminal act. "Apart from the moral sense which," says Prof. Ferri, "is not a special sentiment but an expression of the whole moral constitution of the individual in the same way as the temperament is an expression of his physiological constitution, the remaining egotistic and even altruistic sentiments are not wanting among the majority of criminals. The existence of this fact is the cause of many illusions among superficial observers of criminal character." But inasmuch as the sentiments which do exist among criminals are not based upon the moral sense, they are either incitements to crime or are powerless to prevent it. The intellectual inferiority of the criminal shows itself most conspicuously in a want of foresight, which, however, often exists in combination with a considerable amount of superficial sharpness and cunning. In volitional characteristics the criminal resembles the child and the savage. He possesses no power over his desires, no power of combating a



vicious environment, he is a creature of impulse devoid of mental equilibrium. In Prof. Ferri's view criminal psychology is much more important than criminal physiology, and has a much more direct influence in shaping the principles of penal philosophy.

The conclusions at which Prof. Ferri has arrived with respect to the psycho-physical constitution of the criminal classes have been disputed on a variety of grounds; therefore, after setting forth these conclusions he proceeds with much polemical ability to meet the criticisms and objections of his opponents. The first of these criticisms is directed against his method of investigation, the second is directed against the scientific presuppositions on which his method is based, the third criticism is founded on the mutations which have taken place in society as to what constitutes a crime, while other objections take the form of pointing out that investigators of the criminal type often contradict one another, and that the characteristics supposed to belong to criminals are frequently found among members of the non-criminal population. All these criticisms and objections are examined and dealt with in detail: they all assume that, according to Prof. Ferri, the criminal is a product of biological conditions, and biological conditions alone. Prof. Ferri emphatically protests that his ideas on this point are misrepresented by his critics. He does not hold that the criminal is a product of biological conditions only: he holds that the criminal is a product of cosmical, biological and social conditions acting in combination, but in each particular instance with different degrees of force. This is Prof. Ferri's fundamental position as to the origin of crime, and he contends that the criticisms of his opponents are all more or less valueless because they will persist in arguing as if he attributed a purely biological basis to criminal phenomena.

It is customary to classify the criminal population into groups corresponding with the nature of the crimes which they commit, and this method of classification undoubtedly has its uses. But from a sociological point of view, that is to say, from the point of view of social therapeutics, it is much more philosophical to classify the criminal population in accordance with the conditions which produce crime. It has already been seen that these conditions are three in number, biological, cosmical and social. A classification of criminals to accord with these conditions would lead us to divide them into two fundamental groups, the first group consisting of criminals by psycho-physical organisation, and the second group consisting of criminals by environment. In terser language the first group consists of criminals by nature, the second of criminals by nurture. In the first group it is congenital organisation which plays the most conspicuous part, in the second it is external circumstances, although, of course, the criminal disposition is an organic product arising out of the interaction of both these factors. Prof. Ferri discusses the various ways in which criminals have been classified at considerable

length, and finally comes to the conclusion that they may be divided into five fundamental categories : insane criminals, born criminals, habitual criminals, occasional criminals, and criminals by passion. It is perfectly true that this method of classification has been widely adopted, but it seems to me that it hardly corresponds with the dominant conditions which produce crime, although Prof. Ferri professes to base his classification on those conditions. Prof. Ferri's insane criminals, born criminals, criminals by passion, are criminals by psycho-physical organisation : his occasional and habitual criminals are criminals by environment. It conduces to clearness and simplicity to keep the classification of criminals in as close connexion as possible with the conditions from which crime arises, and this object is most successfully attained when the classification is based on the two fundamental heads : organisation and environment.

In the second chapter of his work Prof. Ferri endeavours to show that punishment has hardly any effect in diminishing the volume of crime. In defence of this contention a vast amount of historical, statistical and psychological facts are adduced, and it must be admitted that these facts go a very long way towards establishing his case. It is established by a reference to history that the most severe penal laws did very little towards diminishing the offences which they were directed against. It is also established by a reference to criminal statistics that the movement of offences against property is governed by the oscillations which take place in the economic condition of the community. In periods of economic crisis these offences increase, in periods of economic prosperity they diminish. In a word, the volume of crime is regulated by certain biological, cosmic and social conditions, and it moves up and down according to the extent to which these conditions vary in the heart of the community. The edicts of the penal law are powerless, or almost powerless, to alter the conditions which generate crime, hence they are almost powerless to diminish its amount. An obstinate and unreasoning belief in the efficacy of punishment has the pernicious consequence of diverting attention from remedies which are calculated to reduce the volume of crime. These remedies consist in altering as far as possible the conditions from which it springs. These conditions cannot be altered by enacting fresh penal laws, but by carefully thought out social reforms. In so far as these reforms have the effect of diminishing the amount of psycho-physical degeneracy among the population, and in so far as they have the effect of raising the standard of material well-being, they will at the same time have the effect of diminishing the proportions of delinquency.

In a long chapter on the positive theory of penal responsibility Prof. Ferri discusses the problem of penalty from the determinist point of view. Inasmuch as the criminal is a product of cosmic, social and biological conditions criminal law cannot be based upon

the theory of individual responsibility, it must be based upon the doctrine of social defence. Although the offender is not responsible for his actions the society which he assails is bound in the interests of its own self-preservation to defend itself against his attacks. "If the criminal," says Prof. Ferri, "tells the state that he was irresistibly impelled to crime, and therefore should not be punished, the state is able in its turn to reply that it also is irresistibly impelled to punish him; that is to say, to defend itself. It is perfectly useless for the criminal to say with Reid that he did wrong because he was obliged to, and that necessity has no law; the state is able to answer: 'I also defend myself because I am obliged to, and necessity has no law'." The fourth chapter is devoted to an exposition of the methods of social defence, and is full of interesting matter as to the best way of dealing with the convicted population. The fundamental principle of Prof. Ferri's system is that the nature of punishment should not be the same for almost all classes of offenders, as is the case at present, but that it should be adapted to the various categories into which offenders are divided. The last chapter sketches the probable future of penal science, and closes a book marked by great acuteness and originality. The writer exhibits an admirable combination of philosophic acumen and practical sagacity, and whether we accept his conclusions on every detail or not we always feel that they are being presented to us by a man in possession of an unusual mastery over his subject. It is to be hoped that the French translation of Prof. Ferri's work which has just been published under the title *La Sociologie Criminelle* will induce many readers in this country to make the acquaintance of this robust Italian thinker.

W. D. MORRISON.

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*L'Évolution intellectuelle et morale de l'enfant.* By G. COMPAYRÉ.  
Paris: Hachette, 1893. Pp. xxiv., 371.

The preparation of this book was announced in 1880, but one does it no injustice in saying that its chief value comes from its having appeared after the kindred books and papers of the last ten or twelve years. It is now unquestionably the best introduction to the psychology of children: it aims at covering the whole field, it is the best guide to the literature on the subject in French and English, it brings together for comparison the observations to be found there and, of course, in Preyer, and it is arranged in something like the order usually adopted in books on general psychology. And it is an introduction, not merely to what has been done, but to what requires doing. It shows how far observations have been corroborated, what kinds of observation are wanting, and what inferences are matter of dispute.

In a lengthy introduction M. Compayré discusses the interest of the subject and its difficulties and methods. He emphasises

the practical or educational interest, but is not constantly referring to it. The scientific interest is not, he says, in fixing dates at which the child is able to do things, but in finding the order of mental development. "Evidently there are laws of nature presiding over the genesis of the faculties; the thing is to discover these laws." But at the end of the book one is still in doubt, not only as to what the laws are, but as to what exactly is being sought for. What M. Compayré does is to chronicle the actual order of development, and to point out that one stage (physical or psychical) is necessary to another. Only it is not usual to call prerequisites *ipso facto* laws, and he seems to mean that the name is due if there is anything comparatively general among the prerequisites. One of these 'laws' he often speaks of—that spontaneous movement precedes consciousness—in contrast with a 'law' of adult minds, that consciousness precedes movement. But it cannot be said that such laws are the thing to discover. Much reference also is made to pathological conditions, and to the minds of animals ("qui sont comme les ébauches de la nature s'essayant à l'organisation psychique"). But the main interest is in the historical account of the growth of the functions which general psychology analyses in an adult condition.

M. Compayré practically confines the record to the first four years of life, "to the moment when the scholar succeeds the infant," for "all parts of human nature are represented in this four-year-old mind". He gives some account of opinion as to consciousness in intra-uterine life, but arguing that there is then a want of differentiation in experience, or at least a want of memory, he holds that "the psychology of the infant begins only with its birth". The new-born child is an automaton, and reflex and spontaneous actions go on for some time without consciousness, and before consciousness is possible. In the second chapter a threefold classification is made of involuntary movements. Reflex and spontaneous movements are distinguished in the usual way, and spontaneous movements are classified as automatic and instinctive; they are automatic if there is no co-ordination for an end, instinctive if there is. Under these heads the author seeks to classify the earliest actions of children which are afterwards to become conscious. He argues against the usual opinion that sucking is reflex, holding it to be properly instinctive, though without going the length of M. Espinas, who thinks the child is able to find its mother's breast. M. Compayré's argument is that though an object needs to be presented to the lips, sucking does not take place if there is no internal need, and it ceases on satisfaction. On this view it would be hard to name any reflex action that is not instinctive—*e.g.*, which cannot be inhibited. He deprecates, however, the tendency to see instinct everywhere. M. Perez "would have, if not with the ancients a god, at least an instinct of sneezing". Crying he holds to be

mainly spontaneous and automatic to begin with—certainly not expressive of conscious irritation or a feeling of weakness, as Kant says, nor, in the case of prolonged cries, merely a respiratory reflex, as Preyer says. Later, when the infant is able to pay attention to its cries, they are due, not to a feeling of weakness, but rather the opposite: "the crying child has often pleasure in crying," merely as exercise. Smiling, laughter, sobbing, and sighing are similarly explained; they are automatic till practice brings them to consciousness, and consciousness somehow gives them meaning. What reflexions one would make on this chapter concern the limits of the three categories—what kinds of stimulus M. Compayré would allow to differentiate reflex from spontaneous movements, and, among the latter, what kind and degree of purposiveness he would allow to differentiate those that are instinctive from those that are automatic. One also doubts what he says on the weakness of reflexes in infants. He denies that this is owing to incapacity in the motor apparatus, to weak vitality, or to want of practice, believing it to be due to obtuse sensibility in the sensory nerves.

An excellent account is given of the results of research bearing on sense-perception. With respect to sight, the matters investigated have been the range of vision in breadth and depth, the ability to localise objects at a distance, the power of co-ordinating movements of the eyes and the eye-lids, and the sense for colours. M. Compayré collects and arranges the observations and experiments that have been made, and discusses wide discrepancies, tracing them where possible to differences in the methods employed—as in testing for short-sight, and the power to distinguish colours. He does not give material of his own, but he makes it clear what sorts of observation and experiment are required. He also enters upon several well-known disputes. The experiments of Preyer and Binet he concludes to be sufficient to show that the sense for colours at the red end of the spectrum is developed first, but he would be slow to argue about the colour-sense of early races. He treats in the familiar way the origin of the perception of the third dimension, concluding that "the natural perceptions of sight reduce themselves to colour and surface extension: all the rest is acquired"; but he sees no incongruity in assenting to the view that "up to a certain point" the feeling of convergence gives "a vague notion of distance". He also takes up at some length the question of control over the ocular muscles, arguing against Preyer that not all attention is a matter of will. The argumentation here is somewhat typical of much else throughout the book. His view is that, when combined action of the eyes chances to occur among their numerous independent movements, it is selected and maintained in preference to unco-ordinated action of the muscles of the two eyes. The agent in the selection is "a dominant sensation continued or often renewed". Hence "the

ocular muscles take, so to say, the habit of associating their movements . . . and once they have taken the ply they keep it ; . . . so that, on the day when will shall appear, it will find the optical mechanism quite ready to function under its orders". This kind of reasoning is unfortunate. It gives one power to "*une sensation dominante*," another to "*un désir, une curiosité intérieure*," and a third to "*la volonté*". And it is not conscious enough how little is explained by "the empire of a dominant sensation" and the rest. M. Compayré's historical account is the matter of value, and to it we take no exception ; but one does not gather much from his expansion into an empire of what he also calls "*la force même des choses*".

There is an interesting chapter on the other special senses, followed by one on the origin and expression of early emotions. "Gluttony is the first of the passions," and anger and jealousy appear first in connexion with it. Fear requires previous experience in most cases : "a child that has not been beaten does not understand the meaning of threats, and is not frightened by them ; you go towards him with hand open to beat him, he will answer you with a pretty smile". But he maintains that there is instinctive fear of what is new and unknown, and of darkness. None of the examples quoted are decisive, however, as to whether and when fear is or is not instinctive. Indeed it is far from clear what is meant by instinctive and what by fear—what is the minimum amount of imagination that would not disqualify fear from being instinctive, and whether, under fear of what is unknown and of being alone in the dark, we are to understand not merely astonishment but disappointment. The one observation of the author's own only shows the vagueness of the question : he caps Preyer's story of a girl of four months crying when she saw her mother with a big hat on her head with one of his own son of four years and a half getting into "an actual rage" because he spoke to him in patois. He argues against Darwin's view that there may be specific fears inherited by children. He holds that there is at first a period when fear is wanting, and that the feeling rises in proportion as the child comes to feel pain and its own weakness. That makes it all the harder to see the value of the discussion on the innateness or the instinctive character of one emotion more than another. And M. Compayré seems to feel this in his treatment of love in children. The child has an "instinctive tendency" to love. There are reasons why its love attaches to one person rather than another, as a climbing plant takes to one tree rather than another ; but the reasons are not the life of the thing. In its early leanings the child is an egoist, and (according to a later chapter) the more so the better : natures that are "dry, without tenderness, hard at heart," are just those that have not at first been passionate in their egoism. This egoism is, however, "*amiable*," not of the calculating or "perfect" kind. Altruism is the adult state of it. The growth

is through the sympathies of children for others, and these are deep in proportion to the depth of its egoistic feelings at the start. For its sympathies are for persons and things that seem to be on the same plane of feeling with it, and so for its parents who seem to feel its pains and pleasures, and for animals which seem to share its weakness.

The lack of memory in the earliest years is attributed to the want of unifying principles—the ideas of self and of time,—to the child's interest being absorbed in what is present, and to the want of language. Whether some of these are causes or effects is, of course, a question. M. Compayré also treats of the peculiar strength of memory a year or two later on. He does not seriously attempt to account for it; what he says comes practically to this, that, since memory is specially strong after sleep or moderate eating, "it is natural that in the morning of life, when the soul wakes for the first time in all its youth and freshness, the faculty of memory should also develop with extraordinary force". He combats the view that in childhood memory is vague: rather, "the capital defect is that it is literal and mechanical".

There is much that is worthy of notice in the next chapters. The seventh is on the different forms of imagination, the eighth on the development of consciousness and attention and on the association of ideas, the ninth on imitation and curiosity, and the tenth on judgment and reasoning. Fault is certainly to be found with this arrangement, which is due no doubt to the author's tendency to multiply faculties, but the book suffers little.

One turns with especial interest to the next chapter on "How the child learns to speak". It touches on all the questions that have been raised in this connexion. There is, of course, nothing corresponding to Preyer's elaborate history, but a summary would have been useful, especially a diagram such as Dr. John Wyllie has in his series of articles on the subject (*Edinburgh Medical Journal*, vol. xxxvii.). There is not very much said about the parallel with speech-derangements in the different forms of insanity, nor of how far there is common illustration of the "law of least effort" in the language of children and in the shifting of sounds in the history of a language. And indeed it is doubtful as yet how much is to be made out of these inquiries, child speech illustrating so very much at first sight. There is no speech-derangement due to any sort of brain lesion that is not also found in children; and the law of laziness, economy, or least effort, is found taking every sort of liberty. So that there is not very much to be said without more material. The question which M. Compayré treats most fully is the degree of spontaneity shown by the child in the acquisition of language,—especially the disputed question whether it invents both word and sense, and so whether there is likely to be value in knowing the sort of words and the extent of the power. He holds that there are pure examples in the child's imitations of animals and its interjections, but that words like



*ham, tem, mum* are corruptions of words it has heard. He seems, however, to admit the power without limitations, holding that what is wanting is the need for using it. He denies that there is any argument in the fact that deaf-mutes (who are only deaf) do not speak, and he quotes Laura Bridgman's case and Mr. Hale's narratives as crucial instances. His view is that children feel no necessity of coining significant words as primitive peoples did, that it is "perhaps necessary" for the parent to start them in the use of sounds, but that they have and use the power of going on spontaneously after that. The last section of the chapter shows how the logical attitude of a child is revealed in various ways by its language.

The next three chapters are mainly ethical. They are partly polemical on account of the author's view of what constitute real acts of will and morality, and when these appear in purity. But aside from this there is a careful account of the growing breadth and complexity of early activities. As to moral tendencies, the author, without being optimistic, holds a brief against the bad qualities assigned to children. Children don't torture animals from want of pity: "the child is a cartesian without knowing it," taking animals to be automatic like its playthings. As for the charge of lying, that is not proved by the child's realistic imaginings. "The child is not a born liar;" it is awkward at first, though there is "in it, as in woman, natural finesse to assist its weakness". Theft is excusable, property being so difficult to define, and "the child has not yet studied the code". Gluttony, vanity and indolence are probably acquired through bad example and the weakness of mothers. Anger and jealousy, however, are natural perversions. It is unnecessary to remark on this, or on the view that ideas of justice and the feeling of human solidarity are very early, while remorse and repentance are as late as six or seven.

After describing the various kinds of madness that have been found in children, M. Compayré concludes with a contentious chapter, chiefly on the consciousness of self. He argues against Luys as holding a "new nominalism" that would make self-consciousness come to light by teaching the child to use the pronoun when speaking of himself, and especially against Preyer as holding "the doctrine of the sensationalists, that the self is but a collection of sensations". These arguments are sufficiently familiar, being of the usual sort—what is physiologically conceivable is psychologically inconceivable. The author's own view is expressed too meagrely to admit of special discussion: the child is easily able to know itself as a person, "because in fact it is a person"; but at first consciousness is without distinction of subject and object like the vaguest feeling we have on waking from sleep; in the child (as in the adult gradually waking) it is memory that works to produce the feeling of self; and the feeling is developed and strengthened when will comes and enables the child to regard itself as a cause.

M. Compayré is so well known to be a writer on education that it is necessary to mention two marks which distinguish him from the bulk of educational writers in books about children. One is that the style is not diffuse and exuberant, the other that the advices about education are neither trivial nor even frequent enough to be irritating. The references to education would have been more interesting if they had not been so sensible; there is nothing like Locke's doctrine of punishments before the child has memory enough to bear a grudge against their author, or Mr. Spencer's idea of its organic omniscience. M. Compayré's view is that "the character of the child is a piece written in collaboration" by nature and education, and that the parent should be present throughout its mental birth to provide against the distortion that may come from either collaborateur. But as yet not much ground has been made for scientific interest, the dispute as to the relative forces of nature and education being, in its general form, somewhat meaningless.

W. MITCHELL.

## VIII.—NEW BOOKS.

*The Process of Argument.* By ALFRED SIDGWICK. London: A. & C. Black. Pp. 232.

An attempt to apply the views advocated in the author's recently-published book on *Distinction and the Criticism of Beliefs* to that part of Logic which is concerned with material inference. 'Argument' is here conceived in its widest sense—not only as controversy between two parties, but, as the struggle of Belief with Doubt, whether between two parties or not. The general aim is to show the composite character of the component parts of any argument, and the gradual character of the difference between sound and unsound inference.

*The Skeptics of the Italian Renaissance.* By JOHN OWEN. London: Swan Sonnenschein & Co. Pp. xvii., 419; xxxvi.

Mr. Owen defines the true Skeptic as "the seeker after ultimate Truth, or, in other words, the Absolute". What he desiderates is "not only demonstrable and infallible, but unconditionally perfect and all-inclusive Truth" (preface, pp. xi.-xii.). The definition seems excellently adapted to cover all philosophers except those whom historians have agreed to call by that name which we all pronounce as Mr. Owen writes it. Neither Pyrrho nor Carneades, neither Montaigne nor Hume was a Skeptic in his sense of the word. On the other hand, his definition suits Descartes well enough; and although every one else thinks of Descartes as a Dogmatist, he is referred to as a Skeptic in this volume (p. 346). But the traditions of language are speedily changed. A little further on we learn that in Theology the Skeptical Method "not only allows but postulates a defect of demonstrable knowledge as an inevitable condition of man's limited faculties" (p. xiv.). It appears then that the "Skeptic" seeks for perfect truth with the certainty that neither he nor any other man can ever attain it. If such an infatuated person ever existed a useful name ought not to be misappropriated for his benefit. In point of fact Mr. Owen's "Skeptics," at least so far as the present volume goes, are persons who make war on time-honoured abuses or on traditional fallacies, occasionally substituting for them new practices or principles of their own or of other persons—it does not much matter which. They had better perhaps be called intellectual reformers than Skeptics.

The Italian race, great in the fine arts, in literature, in jurisprudence, and in physical science, has always been singularly weak in pure philosophy; and these so-called Skeptics of the Italian Renaissance would make but a poor show if Mr. Owen had not pressed several men of letters into the service. Dante heads the list by virtue of his alleged Protestant sympathies; but his claims are so feebly supported that no time need be wasted in discussing them. Petrarch has more pretensions to the character of a free-thinker; but on examination these resolve themselves into the natural distaste of a humanist for scholasticism, medicine, jurisprudence, and astrology. His religious orthodoxy seems to have been unimpeached; and the same may be said of Boccaccio, towards whom Mr. Owen shows a strange tenderness, even placing him in line with Descartes as a European teacher. The "lesson of the Decameron," it seems, was "the primary veracity of the human conscience" which he

reached by "stripping off the figments and falsities of mediæval belief," "just as Descartes penetrated through the alluvial strata of his acquired knowledge until he came to the primary rock of consciousness" (p. 142). Their real relation was the very reverse of what is here stated. Such a notion as conscience had never dawned on Boccaccio; and the sensuality which was his sole guide in life would be better paralleled by the philosophy of simple sensation which Descartes so summarily threw aside. Much stress is laid on the apologue of the three rings as a protest against Roman Catholic intolerance; but Boccaccio did not originate the story; and it seems to interest him chiefly as a clever way of escaping from a difficult situation. Another singular example of "Skepticism" understood as a search for absolute truth is offered by Pulci who, on Mr. Owen's own showing, believed in nothing but the gratification of animal appetite. On the other hand very hard measure is dealt out to Machiavelli, whose political unscrupulousness is certainly not more immoral than the treachery practised towards one another by husbands and wives with the full approval of Boccaccio, while it is at least made subservient to a noble end—the unity and independence of Italy. In the instance of Machiavelli "Skepticism" is interpreted as disbelief in the goodness of human nature, as if this did not imply an equally positive belief in its wickedness, and as if his denunciations of his own countrymen and contemporaries applied to mankind in all places and at all times. At least they did not apply to the Germans, whose goodness he particularly admired. The last literary "Skeptic," Guicciardini, is praised for his "probity and integrity" with a confidence that will excite some surprise in Italy.

We now pass to the only philosophers properly so called whom Mr. Owen presents as types of Italian Renaissance "Skepticism"—Pomponazzi, Giordano Bruno, and Vanini. About the lives and teachings of these three men a great deal of information, which will be new to English readers, is given in a very picturesque, if somewhat diffuse and rambling, style. But as philosophical criticism and historical deduction these sections of the volume possess little value. Pomponazzi was not an original thinker but merely a commentator on Aristotle, who asserted with perfect justice that human immortality was inconsistent with his master's teaching, although he, as a Christian, was bound to accept it. By virtue of what definition can this attitude be called "Skeptical"? Certainly by none that Mr. Owen supplies. Giordano Bruno had the merit of entirely discarding the authority of Aristotle and reviving, with the assistance of the Copernican theory, those older and truer speculations of Greek philosophy which Aristotle's system had so long kept in abeyance. To call such a man a "Skeptic" would be outrageous, even if, as quoted by Mr. Owen (p. 296), he had not expressly ridiculed the skeptical attitude, likening it to that of an ass that halts between two ways not knowing which to take (p. 296). Indeed we find an admission that his "Skepticism" was only partial (p. 341), amounting as would seem to no more than an acknowledgment that the One, the Absolute, and the Infinite are, in their abstraction, incomprehensible by human reason (p. 305). But this does not entitle us to say that he was "distrustful of attaining truth" (p. 304), a position quite incompatible with the faith in the ultimate triumph of truth ascribed to him elsewhere (p. 264). By the way I may mention that this transcendentalism of Bruno's, whether "Skeptical" or not, is radically distinct from the idealism of Hegel with which Mr. Owen seems to confound it (p. 335). The last so-called Skeptic is Vanini, a second-rate Aristotelian who owes what little reputation he still enjoys

to his tragic death. This exorbitantly conceited and intellectually irresolute young man was neither a type of his own age, being, as would appear, totally ignorant of the vast scientific revolution that was going on around him, nor a precursor of modern thought, but a belated straggler, what the Germans would call a *Nachzügler* of the Renaissance. Mr. Owen epigrammatically characterises the attempted explanations of physical phenomena given in his *Dialogues* as "Ignorance tempered by superstition," but unfortunately adds that "the same reproach may be made to every physical inquirer of his time" (p. 384). Is he not then aware that Galileo, Kepler, Bacon, Gilbert, and Harvey were contemporaries of Vanini? From a reference further on (p. 407) he would seem not to be ignorant of the fact but merely to have ignored it. Elsewhere he quotes as Vanini's contemporaries, Cardan, Telesius, Agrippa, and Fracastoro (p. 404), of whom three lived a century earlier, and the fourth died nine years before his birth. As a specimen of this unfortunate young pretender's "skepticism" we are told that he "sums up the limits of human knowledge in words of perennial significance: 'effectum rei conspicimus, causam vero ignoramus'"; "a truth," according to Mr. Owen, "which the most recent advance of modern science cannot transcend" (p. 385). A Peripatetic of the Renaissance would be as little likely as a modern scientist to utter such a fallacy as that "we can only know the effect, never the cause"; and in fact, as we learn from a note immediately afterwards, Vanini was only talking about one particular phenomenon, the depression of the magnetic needle. Mr. Owen repeatedly calls Vanini a martyr, but the truth is that, unlike Bruno, he has no claim to that honoured name. A martyr is one who refuses to disavow his convictions for the sake of preserving his life, liberty, or worldly goods; and this choice was never offered to the poor victim of Toulouse. According to Mr. Owen's own pathetic story he was condemned not for any of his printed opinions, but on a charge of blasphemy uttered in private conversation, which he repudiated and which may have been false. The alternative of recantation neither was nor could be offered, for blasphemy can no more be retracted than murder.

Chronology, as will have been observed, is not a strong point with Mr. Owen; indeed with him this eye of history suffers from a kind of permanent astigmatism. Thus the *Divina Commedia* is referred to the thirteenth century (p. 23), Pulci to the fourteenth century (p. 155), Plethon to the fourteenth century (p. 185), and Bruno to the close of the fifteenth century (p. 13). Such slips might be explained by familiarity with the Italian habit of saying Trecento Quattrocento, &c., where we say the fourteenth or fifteenth centuries, were it not that elsewhere Bruno figures as "the freest thinker of the thirteenth century" (p. 263). It is less wonderful that he should "arrive at Venice in 1592," "pass some seven or eight months" between that city and Padua, and finally be arrested on the 22nd of May of the same year (pp. 280-82). Certain philosophers "comment on Aristotle and Plato . . . as if their lot had been cast in Greece 400 B.C." (p. 187). Pomponazzi left Padua in 1509 and did not return to it. Nevertheless he was "peacefully lecturing" there when "Luther had already commenced his campaign against the Papacy" (p. 216). A quite gratuitous reason is given for the tardiness of English as compared with French philosophy (p. 8)—as if Bacon did not precede Descartes by a whole generation. On the other hand we find "the French Revival of Letters immediately preceding the Revolution" (p. 224). Mr. Owen quotes "Horace [? Sir Robert] Walpole's emphatic verdict: 'Tell me not of

history, for that I know to be false". His own at any rate is but partially true. It was not Elea but Colophon that "gave Xenophanes to Greek philosophy" (p. 262). Whatever may have been the case with other Italian cities, the municipality of Florence was certainly not "modelled on the civic government of Republican Rome" (p. 20); nor, if the citizens of the Italian Communes read their classics, were they likely to revere the Scipios as "vindicators of popular rights" (*ib.*). It would have been difficult for Hildebrand to ask: "Was a Hohenstaufen Prince to be regarded as superior to the High Majesty of the Eternal?" (p. 17) unless he could foresee what was to happen a hundred years after his time. Mr. Owen is not lucky with the Hohenstaufens. He calls Frederick Barbarossa "the most remarkable example of Free-thought and Religious Tolerance in the age preceding the Renaissance" (p. 50), and refers to an accusation brought against that sovereign of having "abjured Christianity and embraced the faith of Mahomet" (p. 69), evidently confounding him with his grandson, the great emperor Frederick II. The statement that "few of Aristotle's works were known [to Thomas Aquinas], and those only in the form of Latin translations made from Arabic versions" (p. 197), would be inexcusable anywhere, but is doubly so coming directly after a reference to Jourdain's *Recherches Critiques*. A professed student of Giordano Bruno should know better than to say that the Copernican system was unpleasing to theologians because it "degraded" the earth and "reduced it to a secondary and tributary position" (p. 260). It was the Aristotelian system that made our earth the common sink (*sentina*) of the universe, whereas Copernicus raised it to a level with the heavenly bodies. Mr. Owen is always attacking Roman Christianity, between which and morality he finds an "impassable gulf" (p. 135), but he can hardly have studied its theology or he would not say that the effect of Dante's *Inferno* was to make men ready to sacrifice their last farthing to deliver a dear friend from the "filthy bogias" depicted by the poet's "ungainly imagination" (p. 226). The amazing statement that Vanini "found the Protestantism of Canterbury perhaps even more impatient of philosophical freedom than the ecclesiasticism of Rome" (p. 406) is virtually retracted on the same page. Vico—presumably the Neapolitan philosopher—figures as a martyr of Romanism (p. 248), but where or when or how is not stated.

One regrets to hear that "the author did his share of the proof corrections during a memorable period of debility and prostration," which is perhaps the reason that the pages swarm with misprints. Evidently the index is not his work, nor can he even have given a hasty glance through it. The worst blunder in the body of the work pales before such assertions as that Boccaccio, Pulci, and Ariosto are types of Renaissance *Weltschmerz*, that Boccaccio was a friend of Dante, that Machiavelli wrote the *De Monarchia*, and that Boethius, the fifth century philosopher, carried on a dispute with Giordano Bruno.

ALFRED W. BENN.

*Theosophy or Psychological Religion.* The Gifford Lectures, delivered before the University of Glasgow in 1892. By F. MAX MÜLLER, K.M. London: Longmans, Green & Co., 1893. Pp. xv., 585.

These lectures afford reading of exceeding interest, not only from the lucid expositions given of ancient philosophies, as well as of the researches of other scholars into religious systems, but also as throwing light on the phase of thought through which we are passing at the present day. They cannot fail to win a hearing among the more thoughtful section of

the world of general readers, both lay and clerical. The author knows this world and what it will receive. By him we may judge of it.

Prof. Müller's theme, as previously stated, is that communion between the soul of man and the Deity, the attainment to which is viewed as the discovery of kinship or oneness in kind between the two as constituting an essential relation, is the fundamental and ultimate form of religious aspiration and conviction. "The be all and the end all of true religion is to re-unite" this bond. False religions sever it. For example, in both Hebrew monotheism and Buddhist atheism "the invisible God has been removed from the visible world" (pp. ix., 363-64), and that by mutually antithetical conceptions of Him. In Vedāntism, on the contrary, in Platonism, in Sufism, and finally in Christianity, in so far as it is a continuation of Aryan thought, the concept of this intimate relation forms the very kernel of doctrine, and the strength and truth of them. That this is so is brought out by an inquiry into and comparison of their several sacred writings, including *The Avesta*, as well as of later commentaries and less sacred treatises, and both the virtue and the viciousness of the historic method, or rather of the inferences usually accompanying the historic method, are exemplified. Praise of it is the substance of the first lecture. "The only effective way of studying what is called the philosophy of religion, or the philosophical criticism of religion, is to study the history of religion." Theoretic treatment may not be superfluous, but that in its turn is bound to become material for historic treatment. The same procedure,—frank and fearless historic criticism,—in studying Christianity is urged as a duty upon all the author's readers calling themselves Christians. Now they, if reading impartially, should loosen once and for all the association of finality, whether in revelation or development, with any one religion, and cease to feel exclusive interest in the religious life of any one section of the globe. Moreover, their inductions as to what constitute the elemental truths of religion in all religions should undergo verification by a careful crucial testing of remarkable religions which seem to lack these elemental features. And, finally, they should be led to discern that these elemental features, in so far as they are aspirations and convictions respecting the riddles of life, consciousness, and the universe, while possibly containing germs of truth, are not necessarily eternal conformities between thought and thing because they are general and a virtual *consensus gentium*. On the other hand, if they read not impartially, the historic method may become a powerful weapon of error. They may see in one creed the final consummation of all the creeds of all the ages, even if they go no further than the finality implied rather than expressed in such words as: "Both this striving to meet and the final union have found, I think, their most perfect expression in Christianity" (p. 541). They may, nay they are sure, to speak of their own religion, by no means the most rich in followers, as "flowing on" since its early victorious "struggles with the non-Christian thought of the world," "with irresistible force through the history of the world" (pp. 447, 455). Greater sanity they may learn from such a perspective as this: "The discovery of a rich philosophical literature in India has never attracted as yet the attention it deserves. Most of our philosophers cannot get over the idea that there is one way only of treating philosophy, namely, that which was followed in Greece, and was afterwards adopted by most of the philosophers of Europe. Nearly all our philosophical terminology comes to us from Greece; but without wishing to say a word against its excellence, we ought not to look upon every other philosophy that does not conform to our own formulas as



unworthy of serious attention" (p. 66). Again, instead of measuring the validity of their conception of the central truth of all true religions by important more or less antithetical standpoints, they may be led to dwarf or distort all adequate consideration of such phases: *e.g.*, of two of the most momentous in all religious thought, *viz.*, the appearance of Buddhism, rational and relativist (non-substantialist), in the ancient East, and the growth of an ethical system based on inductive science, experimental and relativist, in the modern West (pp. 386-87). And, finally, they may be led to believe that what they gain from comparing eschatologies of different times and places is "that a belief in a soul and in the immortality of the soul is not simply the dream of a few philosophical poets or poetical philosophers, but the spontaneous outcome of the human mind, when brought face to face with the mystery of death" (p. 231), and because "spontaneous," therefore a common feature of Natural Religion, and because common, therefore true.

Of the interesting expositions and discussions with which the book abounds, there may be specified of the former, the psychological metaphysics of the Upanishads or of Vedantism, an epitome of Sufi poetry, and the doctrine of the Logos; of the latter, the relationship between different religions, the influence of Hellenic mysticism on the development of Christianity, in which the author declares he has "ventured to go far beyond Harnack, Drummond, Westcott, and others" (pp. ix., x.). A brief word on each must suffice.

For the religious philosophy called Vedantism it is claimed that, as expressive of keen mindfulness of the unseen world and the life to come, it was and is a real and present truth to the average, as well as the superior, Indian mind, to a far greater degree, both in extent and intent, than any religion or philosophy has been to the general Western mind. Conditioned as they were, the inhabitants of India looked upon this life, not as an arena or a market, but as a resting-place, a mere waiting-room at a station on a journey, and their utmost curiosity was excited as to the whence and whither of them. By them Psychological Religion has been most vividly grasped and developed, Nirvāna being attained when, yet being in the flesh, the soul claims identity with Brahman, the soul of the All.

In Sufism the author sees a possible ground of reconciliation between Christianity and Mohammedanism.

The doctrine of the Logos, the placing of which together with that of the Messiah in dual coronation on the living memories of the founder of Christianity achieved the most wonderful "identification of the minor" of all Western history,—this doctrine, viewed as the transience of the Noumenal into the Phenomenal or as the "utterance of the thought of God which made the world," is held to be one of the most natural and most accurate, nay, most true, conceptions of the world and "of the true origin of species" (p. 382). Since, according to the author, we must in denying A affirm E, since we must choose "between a belief in Reason and a denial of Reason at the bottom of all things," it is clear that the Platonic theory of archetypal ideas, or even the cosmogony of barbarians further West, *e.g.*, of Klamath Indians, is superior to modern hypotheses of "evolution,—survival of the fittest and all the rest" (pp. 383-89). The author seems to wonder that "the simple question, what the Logos was in respect to the Deity, received no definite answer from" Sokrates or Plato. The former no doubt (and in this one respect perhaps the latter) was too old to see visions and too young to dream dreams. But this defective reticence is made good in the Gifford lectures for 1892.

Finally, it is curious that the Psychological religion of Cambridge

Platonists should find repeated mention when the more truly philosophic "theosophy" of Malebranche and Spinoza is entirely passed over.

C. FOLEY.

*Elements of Psychology.* By JAMES MARK BALDWIN, Professor-elect in Princeton College, Professor in the University of Toronto. London: Macmillan & Co., 1893. Pp. iv., 372.

This book, as the preface intimates, is an abridgment of the author's well-known *Handbook of Psychology*. It differs from the larger work mainly in its omissions. But certain sections have been rewritten and chapters recast so as to simplify the exposition. One decided improvement on the plan of the "Handbook" is that the chapter on the Nervous System comes in its natural place, at the beginning. The points which aroused most interest in the original work were the treatment of "Feeling" and that of "Belief". Prof. Baldwin claims that he has now set his doctrine of Feeling in a clearer light. Our main difficulty does not lie in following his exposition, which is plain enough. It lies rather in the extreme comprehensiveness of the Conception of Feeling as he defines it. "*Feeling is the subjective side of any modification whatever of consciousness.*" "Whatever we mean by *my* consciousness in opposition to your consciousness sums up feeling." But the *individual* consciousness forms the whole subject-matter of Psychologists. Feeling must therefore be synonymous with consciousness as the psychologist regards it. It is a tautology to speak of the "subjective side of consciousness". What is the individual consciousness except in so far as it is subjective? It is true that the thinking consciousness refers to objects. But, apart from ontological theories, it is an abuse of language to describe the objects referred to as an aspect of the consciousness which refers to them. We might, indeed, agree to apply the term feeling to all mere anoctic experience as distinguished from the objective reference in which thought consists. But this does not appear to be Prof. Baldwin's meaning. The doctrine of Belief certainly contains much interesting and valuable matter. The genesis of the ideas of reality and unreality from primitive experiences of gratified and disappointed appetition is clearly and convincingly expounded. But it may be questioned whether an account of the genesis of this distinction constitutes an adequate analysis of the psychological conditions of belief. In conclusion we congratulate Prof. Baldwin on having succeeded in his main aim. He has produced a really good text-book for elementary classes, presenting "the newest essentials of the science in a single compact volume at reasonable cost".

*Introduction to Physiological Psychology.* By Dr. TH. ZIEHEN. Translated by C. C. van Liew and Dr. O. Beyer. London: Swan Sonnenschein & Co., 1892. Pp. xv., 284.

This book is a translation of the first edition of Ziehen's *Leitfaden*. In addition to the author's preface and fourteen lectures it contains a short translators' preface, a useful index and a few additional notes.

Every psychologist must welcome the appearance in English of works belonging to the literature of experimental psychology. Whether we accept the conclusions set forth in a particular book or not, it is a great gain to have them formulated in our own language. But the public has the right to demand that the labour of translation be undertaken by competent hands and carefully carried through.

I have compared with the original, sentence for sentence, chaps. i., ii. and xiv. of the present volume; and cannot predicate of the English

version either adequacy or exactness. It is true that there are no, or but few, mistakes which could seriously mislead the student. Dr. Ziehen's style is clear, and his periods for the most part short. But this makes his misinterpretation even less excusable.

The translators have aimed throughout at literalness of rendering, and at the reproduction, where possible, of the author's own sentences. The aim is, in a case like the present, most commendable, and success should not be difficult of attainment. But it is plain that, with such an object in view, the greatest care must be taken with conjunctions and other 'small words,' if the original train of thought is to be faithfully reflected. Yet another fault of the book is the translators' ignorance of the technical terms of experimental psychology. Their handling of the language in general is stiff and unfamiliar.

These statements can be easily proved from the three chapters above mentioned. Chap. i. contains four mistranslations. (1) P. 8, l. 15, should read "by flexion and, as it were, drawing in". (2) P. 11, l. 6. Here it is the normality of the decussation which is the very point emphasised. (3) P. 14, l. 21. *Schliesslich* is misplaced and, consequently, wrongly rendered. (4) P. 14, note 2. The "of course" is wrong. So on p. 15, l. 20, and p. 18, l. 6. Chap. ii. has several: (1) p. 25, ll. 17, 18; (2) p. 26, l. 2; (3) p. 27, ll. 3, 7, 10; (4) p. 28, l. 4; &c. See, too, p. 269, l. 15.

Minor inaccuracies and omissions abound. I quote some of them: p. 4, first sentence; p. 10, l. 29, and l. 30 (*also* = 'moreover'); p. 11, l. 32 ('first' omitted); p. 17, l. 6 ('only' omitted); p. 24, l. 21; p. 32, l. 6 ('which' omitted); l. 17 ('chiefly' introduced); l. 18 ('at least' introduced); p. 34, l. 18; p. 36, l. 6 ('and' omitted); l. 7 (*also* = also); ll. 28, 29; p. 267, l. 7 ('implicitly' omitted); p. 268, l. 9 (*gerade* omitted); p. 274, l. 3 ('suddenly' omitted); p. 276, l. 22.

As for technical terms: *Reiz* is rendered indifferently by 'stimulation,' 'irritant,' 'stimulus'; *Erinnerungsbild* by 'image of memory,' 'mental image,' 'idea'; 'consciousness' is made to do duty for *Vorstellungsleben*, *Selbstwahrnehmung* and *Bewusstsein*. It must in fairness be admitted that Dr. Ziehen himself has set the example of looseness of usage in this respect. 'Accessory current' is given for 'secondary circuit'; 'sensation of tension' for 'strain-sensation'; 'arrestive' for 'inhibitory'; 'power' for 'force'; 'desired' = *gewollt*; &c. The words 'motory,' 'incitation' may be misprints only. Curious phrases are common: 'retire to some other place' for *bewegt sich vom Platze* (p. 12); 'a well-estimated bound' (p. 13); 'intercedes' for 'intervenes' (p. 26); 'the same as' = 'in the same way as' (p. 268 and elsewhere).

Many of the blemishes pointed out are, no doubt, unimportant: but the list is surely too long. Paragraphs read at random in the body of the book (pp. 88 ff., 133 ff., &c.) have not led me to modify my judgment of the translation. The English student may be grateful for what is given him; but the translators must revise and revise again, if they are to be regarded either as careful or competent.

E. B. TITCHENER.

*The Philosophy of the Beautiful, being a Contribution to its Theory, and to a Discussion of the Arts.* By WILLIAM KNIGHT. London: John Murray, 1893. Pp. xiii., 281.

A University Extension Manual is not expected to be profound or exhaustive; it can afford to do little more than present a conspectus of the essentials of its subject (for that usually makes up in range the limitations in scope), be suggestive as to ultimates and tendencies, and regulative as to 'extension' of study possible to the reader. The manual

under consideration, which is the sequel to the author's *History of Æsthetic Theory*, fulfils all these functions. It throws out with easy, unlaboured treatment suggestions towards a "more complete theory" of the nature and functions of Beauty, briefly criticises "inadequate or partial theories of Beauty," glances at the nature and functions of Art, stays a while longer over the correlation of the arts, and finally allows itself some expansion in a discussion on each of them. Moreover the work is conceived in a conciliatory spirit, and endeavours to co-ordinate some traditionally hostile standpoints, so far at least as is possible in a few slight sketches. The chief points in Prof. Knight's theory of Beauty when sifted out appear somewhat as follows: Beauty as discerned is a phenomenon both of subjective and objective validity. If we discern it by a special faculty, there must be an affection and co-operation of other faculties, since each so-called faculty "is but a manifestation of conscious life working along a particular channel of activity". A psychological study of Æsthetic, both analytic and genetic, is the requisite introduction to the Philosophy of the Beautiful. (The author does not undertake to outline the psychological data of æsthetic, such as this position seems to call for.) But no analysis will reveal the nature of Beauty, for this involves a "higher synthesis". Beauty is discerned in inverse proportion to intensity of sensation. Appealing in the first instance through sense, it suggests, as pleasure-evoking, something purely subjective, but when grasped by the intellect it is recognised as objective. It lies in the type or Universal (Platonically conceived), and types are "mind-forms" variously embodied, evolving out of antecedent forms in the process of ages, and forming *inter se*, when shaped by the life-energy of the world which is the effective working of "Natura naturans," a unity or harmony. In this fructifying stream of life "the ultimate Beauty resides and reveals itself, being "the disclosure of the Absolute through the relative," the revelation or radiance or suggestion of the unseen mind-form or noumenon. All other theories of Beauty are partially true only. Beauty, no doubt, is pleasure-giving, useful, proportion, unity in variety, and its standard through the influence of pleasure becomes established by association and habit. But these do not exhaust its nature and functions, and the theory now put forward alone accounts for the idealism or *representative* unity of a genuine, and not merely imitative work of art. Such a product is an endeavour to seize and bring out in the most representative embodiment possible the hidden mind-form of which some object is the expression in the macrocosm, and with which the human microcosm in discerning it finds itself akin. And as this relation is apprehended within certain limits diversely by different minds, and at best imperfectly, so an absolute standard is consistent with the relativity of knowledge, and with a virtually infinite progression in artistic approximations to that standard.

Mr. Pater's theories respecting music as the consummate art, and sensuousness rather than intellectuality as the essence of art, are combated. Historical sketches of Russian and Danish Æsthetic, omitted from the companion work, are appended.

*Ethics: An Introductory Manual for the Use of University Students.* By F. RYLAND, M.A. London: George Bell & Sons, 1893. Pp. x., 220.

"The object of the following pages is to give a sketch of ethical theory designed in the main on the customary English lines as laid down in the regulations of the University of London" (Preface). Mr. Rylands has produced a very clear and well-written little book, admirably adapted for its purpose, and containing acute and suggestive observations which show him to be fitted for much more ambitious undertakings.

*Introduction to Philosophy.* Dictated Portions of the Lectures of Dr. L. BUSSE, Professor of Philosophy in the Imperial University. Second Edition. Tokyo. Pp. 151.

*Portions of the Lecture on Ethics,* held by Dr. L. BUSSE, Professor of Philosophy in 1889. Tokyo. Pp. 70.

These lectures were delivered in English by a German professor to Japanese students. They contain little more than a slavish reproduction of Lotze's doctrine. In many places his very words are used. The author's English is very curious. As evidence of the mode in which Philosophy is taught in the University of Tokyo the lectures have a certain interest.

*L'Idiotie.* Leçons Professées à l'Hospice de la Salpêtrière. Par le Dr. JULES VOISIN, Médecin de la Salpêtrière, Médecin du Dépôt près la Préfecture. Paris: F. Alcan, 1893. Pp. 295.

This book is a reproduction of a series of twelve lectures delivered at the Salpêtrière during the present year. The first five treat of the nature of pathological as compared with physiological heredity, of the causes of idiocy, of its pathological anatomy, of its definition and classification, and its symptomatology. But the most interesting part of the work to the psychologist is to be found in the remaining lectures, which are concerned with the mental condition of idiots and their education. For psychological purpose much valuable material may be derived from the account of the protracted process of artificial training by which the idiot is gradually and imperfectly put in possession of those mental acquirements which come to the normal human being in the first years of infancy. In particular, much light may be derived from this source in regard to the distinction between sensation and perception. A long course of education is needed to make possible for the idiot the synthesis of the data of the different senses in the perception of an object. Similarly with motor intuitions. The movement of prehension, the use of knife and fork, the putting clothes on and off, walking and articulation are gradual, difficult and laborious acquisitions. It is noteworthy that the education of idiots is possible only through an appeal to the simple and primitive impulses connected with self-conservation. For instance, the movement of prehension is taught by holding before him tempting morsels of food. We recommend Dr. Voisin's lectures as containing a clear and well-arranged exposition of a subject possessing great psychological interest.

*Des Phénomènes de Synopsie (Audition Colorée).* Par TH. FLOURNOY, Prof. extr. de Psychologie expérimentale à l'Université de Genève. Paris: Félix Alcan, 1893. Pp. 259.

This account of the curious phenomena commonly called, from the most frequent and best known cases, "audition colorée," is based upon two separate inquiries, one conducted by the author himself since 1882 in his immediate neighbourhood, the other opened in 1892 by M. Edward Claparède with the circulation of a printed set of questions. The account is given, as the investigation was evidently made, in a sober and unprejudiced spirit, with full consciousness of the difficulties and shortcomings incident to such inquiries. The results obtained are formulated under the heads of *photismes* (simple visual impressions, whether luminous or coloured), *schèmes* (*symboles* or *diagrammes*) and *personnifications*, and may, the author thinks, be all fairly well explained by the three laws of

affective or emotional, habitual, and accidental (*privilegiée*) association. These laws are however admitted to be inadequate to meet the singular case recounted by M. Grüber at the Psychological Congress in London, a case to which the inquiries now in question afford no parallel, although they yield results curious enough to justify the interest excited in the subject.

*Hypnotisme et Double Conscience*, origine de leur étude et divers travaux sur des sujets analogues. Par le Dr. AZAM, Professeur honoraire à la Faculté de Médecine de Bordeaux, Correspondant de l'Académie de médecine, Lauréat de l'Institut, &c. Avec des préfaces et des lettres de MM. PAUL BERT, CHARCOT, et RIBOT. Paris : F. Alcan, 1893. Pp. 375.

In this volume, Dr. Azam, who was one of the first Frenchmen to make a serious study of hypnotism, brings together a number of memoirs, papers and addresses on hypnotism, somnambulism, alterations of personality, mental affections resulting from injuries to the brain, &c., together with a study of character in health and sickness. The most important of the papers relate the now classical story of Férida—the first case of ‘periodical amnesia’ or double personality subjected to scientific observation—which was commented on in *MIND*, O.S., when first published in 1860. It is of some interest to recall that, in the case of Férida, there was no ‘double consciousness’ in the sense of consciousness of a double existence, and that the even striking differences between her character in the normal and in the abnormal condition might in Dr. Azam’s opinion be plausibly explained through the presence or absence of memory and consequent knowledge or ignorance of her peculiar mental state. A good deal of wearisome repetition is involved in this plan of reprinting *in toto* papers written for different sets of readers and at a time when the facts treated of were not so familiar.

*Lectures sur la Philosophie des Sciences*. Par ANDRÉ LALANDE, ancien élève de l’École normale supérieure, Agrégé de philosophie, Professeur à l’École Monge. Paris : Librairie Hachette et Cie., 1893. Pp. 351.

These lectures are very similar in scope and aim to Prof. Karl Pearson’s *Grammar of Science*, reviewed in the July number of last year’s *MIND*. Both writers—Prof. Pearson with a view of reforming the fundamental conceptions of science, Prof. Lalande in order to combat at once empiricism and mysticism by restoring faith in the human reason—seek to exhibit science as the gradual reduction to order of the original chaos of sensations, and scientific laws as ideal constructions or ‘conceptual models’ rather than as facts of experience. In their conception of nature, they thus equally derive from Kant; the divergence in their treatment of the moral and mental sciences is therefore the more marked. They are agreed in rejecting what they call ‘metaphysics’ or the Science of ‘things-in-themselves,’ but while Prof. Pearson ranks Kant, so far as moralist, among the metaphysicians, Prof. Lalande accepts the ‘practical reason’ as a basis for Ethics of equal authority with the ‘pure reason’ as basis for natural science. Thus for the one Ethics is only the study of the moral man, or a special branch of psychology, for the other it is an independent science.

In treatment the French work lacks the force and originality of the English, if it also avoids some of its inconsistencies. The difference is especially apparent in the discussion of the meaning of ‘law,’ which is the occasion for one of Prof. Pearson’s most brilliant chapters, but where Prof. Lalande contents himself with a couple of quotations from Montes-

quien and Rousseau, adding of his own only a brief note to point out a confusion. He adopts indeed throughout, and in order to meet the requirements of the "programme des classes de mathématiques élémentaires et de premières sciences," the plan of writing wherever at all possible in quotations, a method which, whatever its value for teaching purposes, a good deal impairs the unity both of style and thought. Of the quotations, that from Pascal on pp. 27-30 should be referred not to the *Pensées* as in the edition of 1819, but as in the later and more accurate edition of M. Fougère to the *Préface sur le Traité du Vide*.

*Sémites et Aryens.* Par CHARLES PICARD. Paris : Félix Alcan, 1893. Pp. viii., 104.

Citing Renan's dictum, that modern philology reveals as its essential result a dual contrasted current of Indo-European and Semitic civilisation, the writer sets forth what he considers to be the main features of this antagonism, as shown in the religious attitude of both races, devoting attention almost exclusively to that of the Semite. Whereas the Aryan, with a prevailing Pantheistic or Monistic tendency, has built up creeds of trust in universal justice, and of kinship and union with the Divine, the Semite has ever confronted a hostile deity, darkly inaccessible, a devouring fire, insatiably demanding atonement and sacrifice. "Molochism" has been the typical form taken by his efforts to appease his divinity, whether it was worshipped as Moloch, El, Baal or Jahveh, and the passover originally involved the general partaking of the flesh of human victims till this was commuted by the lamb. In a brief review of the opposite ideals of Aryanism, the writer somewhat "gives away" the case for these, by confounding Buddhism with Vedantism, a purely rational ethical philosophy with religious aspirations based on certain Pantheistic convictions, which that philosophy was concerned to overthrow.

*Descartes.* Par ALFRED FOUILLÉE. Paris : Hachette et Cie., 1893. Pp. iv., 206.

The *raison d'être* of this, the most recent accretion to Cartesian literature, is the progressing roll-call of the series entitled "Les Grands Ecrivains Français," which herewith puts forth its twenty-fourth number. M. Fouillée does not pretend to have any specially original message to utter concerning the work and influence of Descartes. He only insists on the utility, in an analytic age, of directing attention to the heroes of thought who have indicated ends to be attained, and themselves made way towards attaining them. He divides his monograph into an introductory biography, and four books, dealing severally with the system of the universe according to Descartes and according to modern science, Cartesian idealism, the psychology and ethics of Descartes, and the influence of Descartes on literature and philosophy. In the former direction his influence, the author believes, has by Cousin and others been over-rated, although he admits that, with the *Discours*, French assumed in science the position till then held by Latin. But he is in no way disposed to underrate the almost unparalleled effect wrought by Descartes on science and philosophy. The "Cartesian revolution" was not so much the starting from introspection and working towards truth by way of psychological reflexion, as the imposing on all science mechanical, i.e., quantitative methods of procedure. Again, Descartes was the true Copernicus of modern science, exhibiting all explanations by qualities, forces, causes, ends, as merely "anthropocentric". Greater, moreover, than those who solve problems are they who discover problems. To



Descartes we owe, besides many others, that of the distinction drawn between subject and object in knowledge, as well as the irreducibility of thought to movement. For a century and a half after his day, there was hardly a thinker or writer of note who was not more or less Cartesian. In Locke, Berkeley, Hume, and Newton, England nourished Cartesianism, and handed it back to France,—e.g., in D'Alembert; while in Germany its great sequel and renovation was accomplished by Kant. If Descartes were to come back amongst us he would find his great doctrines triumphant, his critical and analytic methods universally applied. All this is substantiated in a lucid and interesting exposition, and finally summed up in cumulative sentence of nearly three pages in length.

*La Philosophie en France pendant la Révolution (1789-1795). Son influence sur les institutions politiques et juridiques.* Par E. JOYAU. Paris: Arthur Rousseau, 1893. Pp. iv., 305.

This book can hardly claim to throw new light on the nature and tendency of the French philosophy which preceded, or found expression during, the Revolution, being little more than a digest of cultured French opinion on the one and the other. But it is of interest as a study in what might be called, by analogy with other sciences, applied philosophies. The writer finds that French historians of philosophy have shirked assigning a fair place in their histories to this period, although it constitutes *une phase originale, sans analogie dans l'histoire de l'esprit humain*. Only "pale epigoni" succeed the greater minds of the century—Condorcet, Volney, Dupuis, Naigeon, Bernardin de St. Pierre, in place of the deceased Voltaire, Rousseau, Condillac, D'Alembert, Diderot—nor is abstract study possible under the circumstances of the age. But we find ourselves confronting "*une pénétration, une infiltration malheureusement incomplète et insuffisante des idées philosophiques dans la masse de la nation, une tentative de réalisation immédiate des théories développées par les philosophes du milieu du siècle*". This permeation is traced in such features of the epoch as the Declaration of the Rights of Man, the Reform of the Calendar, manuals of Republican morals, the cult of Reason and of the Être Supreme, the rise of the Theophilanthropists, &c.; its inefficacy to restrain and guide the surging tide of social passions is traced, not only to the low level of general culture in a society corrupted by effete institutions, but also to those grave defects of eighteenth century philosophy, over-deductiveness and want of seriousness, together with absence of historical and statistical method and insufficient heed to the "People" and all that the state, needs, and possibilities of that large factor involved.

*Les Bases de la Morale et du Droit.* Par l'ABBÉ DE BAETS, Docteur en Philosophie de l'Université Grégorienne de Rome, &c., Secrétaire de Sa Grandeur Mgr. l'Evêque de Gand. Paris: Félix Alcan. Gand, Alphonse Siffer, 1892. Pp. xxiii., 385.

After a few pages on Method and a brief preliminary section, this work is divided into three books, which deal respectively with (i.) the "objective element" of Morality and Rights—including a consideration of the conformity of actions to a rule, of the beneficent character of moral actions, and of obligation. (ii.) The "Subjective element," or Imputability—the reference of actions to specific individuals as *their* acts. The conditions of Imputability are given as Full Consciousness, Freedom, and Deliberateness. (In this section we have a chapter on the "Formation of Free Will" by means of education and correction.) Book iii. treats of Responsibility—the result of Morality and Rights.

After considering in book i. the 'Objective' elements of Morality, M. de Baets gives a summary exposition and criticism of the views of Kant, Bentham and Stuart Mill, Spencer, David Hume and Schopenhauer (in the order mentioned). In his view, none of these writers furnish a satisfactory basis of morality—this, he says, is to be found in that end or destination of man which God has appointed; namely, knowledge of Truth and Love of Good. This end of his being is imposed upon man by God, the Infinite, Perfect, and All-Powerful; and man's Duty is conformity to this will of God, on which he depends wholly, although at the same time he is free to accept or reject the end appointed. M. de Baets considers that all the problems of life and conduct are completely illuminated and unified if considered in relation to this central idea of "man's end, willed by God, but subject to man's free choice".

The book is rhetorical in style, but very readable, and sometimes almost fascinating; and the author's painstaking earnestness, intelligence, benevolence, and practical insight are beyond question. But he appears to be wanting in philosophical penetration and grasp. This is perhaps already apparent as regards the positive aspect of the work; with respect to the criticisms of other writers, it is shown, *e.g.*, in the author's objections to the systems of Kant (p. 35, &c.) and J. S. Mill (pp. 52-55, &c.). His criticism of the latter (whom he appears to regard as the latest exponent of Utilitarianism) is indeed rendered valueless by the failure to distinguish between Ethical and Psychological Hedonism.

On the whole, the part which is most palpably weak is perhaps the section on Method; that which is best is perhaps the criticism (in book iii.) of what M. de Baets calls "*l'école anthropologique et psychiatrique*," of which Lombroso seems to be the most prominent representative.

*Les Lois Sociologiques.* Par GUILLAUME DE GREEF. Paris: Félix Alcan. Pp. 181.

M. de Greef has apparently drawn up this little volume in the form of lectures in the first instance, otherwise it is difficult to account for the frequent repetition of the same ideas in so many of the chapters. In spite of this defect M. de Greef has made a praiseworthy attempt at defining the nature of sociological laws. A sociological law, we are told, is the constant and necessary relation which exists between a social phenomenon and the conditions under which the phenomenon makes its appearance. The method and the only method by which sociological laws are discovered is the method of observation and experiment. The results of the rigid application of this method is to show that there are sociological laws, that is to say, constant and necessary relations between certain social conditions and certain social phenomena. Several instances of the existence of these sociological laws are cited. The relation between the rate of illegitimacy and the rate of wages is an example of an elementary social law, the relation between economic leisure and artistic production is another example, so also is the relation between knowledge and belief, and the relation between suicide and town life. Complex sociological laws exhibit the relation between groups of social phenomena. An instance of these complex sociological laws is the relation which exists between economics and population, or economics and politics, or economics and ethics, or economics and law. According to M. de Greef the thing that vitiates the great labours of Mr. Spencer is that he has neglected and systematically denied the utility and the possibility of classifying social phenomena. Such a classification is indispensable to sociological investigation, and M. de Greef gives a sketch of the manner in which it may be effected. In a chapter on progressive

and regressive laws M. de Greef endeavours to show what the conditions are which produce social advancement or decay. Social decay passes through the same stages as mental decay. What the mind acquires last it loses first. It is the same with society. When a society begins to degenerate the decline first becomes visible in its most complex structures, that is to say, in those structures which are of most recent growth and are most dependent upon the harmonious co-operation of a multitude of antecedent conditions. If the representative system, for instance, is to be looked upon in its present form as the most complex system of government which the world has ever produced, and if there are evident signs that this system is tottering, without any corresponding signs that it is being supplanted by a still more highly evolved instrument, we are to conclude that there is social regression and that society is descending to a lower and less highly evolved plane. In view of recent events we can only exclaim, *Absit omen*.

*Schriften der Gesellschaft für psychologische Forschung, Heft 5. Jean Paul's Seelenlehre. Von Dr. R. VON KOEBER. Die Psychologie Charles Bonnet's. Von Dr. MAX OFFNER. Leipzig: Ambr. Abel, 1893. Pp. 517-728.*

The sole discoverable reason why Jean Paul and Ch. Bonnet are discussed together lies in the coincidence of their views concerning metempsychosis, the existence of an ethereal body which survives the death of the gross body, and similar topics. Jean Paul, it appears, was directly influenced by Bonnet's teaching on these points. We have found Dr. Koeber's account of the great novelist and mystic decidedly disappointing. There is much matter interesting and valuable to the psychologist in Jean Paul's writings. No one could penetrate more profoundly than he into depths of human feeling. But of all this Dr. Koeber tells us nothing. He confines himself to the soul-doctrine, which is only capable of exciting a languid interest as an historical curiosity.

Dr. Offner's monograph is very full and satisfactory. Bonnet is of real importance in the history of psychology. Like Hartley, and to a considerable extent on similar lines, he endeavoured to produce a scientific psychology based on exact analysis and connected throughout with the results of physiology. He himself affirms that he had read little and thought much, and it is therefore not surprising that at a time when novel ideas were in the air, the results of his own reflexion showed many undesigned coincidences with the writings of his contemporaries and immediate predecessors. In his *Essai analytique sur les facultés de l'ame* (1759), he compares man before he has received any sensations to a statue, and he traces with care and minuteness the changes which would ensue if a single sense—that of smell—gradually came into play. It does not appear that he was indebted to Condillac for the idea of this method. According to his own statement he had already thought out his plan of procedure before he saw the *Traité des sensations* (1754). Only in one point was he influenced by Condillac. His original intention was to illustrate the beginning of mental development by supposing the first developed sense to be that of sight. But Condillac argues that it is best to begin with what is most simple, and his reasoning convinced Bonnet. In the execution of their common scheme there is considerable difference between them. Bonnet, unlike Condillac, confines himself exclusively to the sense of smell, on the ground that what is said of it may be easily applied to the other senses. On the other hand he is much more minute in working out details than his rival.

In the expository part of his work Dr. Offner discusses Bonnet's view

of the relation of mind and body; his general view of the origin and growth of knowledge, in which he follows Locke more closely than Condillac did; his doctrine of the concomitance of mental processes with brain processes; his theory of acquired functional dispositions of the substance of the brain, and of acquired functional combinations of these dispositions as applied to explain the facts of memory recognition, association, habit, prejudice, and passion; his interesting account of dreams and hallucination, which he regards as governed by fundamentally the same psychological laws as waking life, the essential difference being that in these states the mind is entirely passive; his doctrine of the mental activity, whereby the soul maintains and intensifies neural processes corresponding to ideas in which it is interested; his theory of abstraction and of intellection in general as dependent on attention; his theories of feeling and of volition. Dr. Offner's exposition is clear and interesting in detail, and it is interspersed with some valuable discussion of the psychological questions which emerge. He succeeds in giving a satisfactory view of Bonnet's teaching as a systematic whole.

RECEIVED also:—

- F. H. Bradley, *Appearance and Reality*, London, Swan Sonnenschein & Co., New York, Macmillan & Co., 1893, pp. xv., 552.
- International Congress of Experimental Psychology*, Second Session, London, Williams & Norgate, 1892, pp. xi., 186.
- A. Macdonald, *Abnormal Man, being Essays on Education and Crime and Related Subjects, with Digests of Literature and a Bibliography*, Washington, Government Printing Office, 1893, pp. 445.
- S. C. Banerji, *Berkeley's three Dialogues between Hylas and Philonous, with Introduction and Notes*, Calcutta, Hare Press, 1893, pp. lii., 134.
- E. Mach, *The Science of Mechanics*, translated from the second German edition by Thomas M'Cormack, London, Watts & Co., and Chicago, The Open Court Publishing Co., 1893, pp. xiv., 534.
- A. Loria, *Les Bases Économiques de la Constitution Sociale*, Paris, F. Alcan, 1893, pp. 430.
- Ch. Dunan, *Cours de Philosophie*, Librairie Ch. Delagrave, 1893, pp. 336.
- L. Bridel, *Le Droit des Femmes et le Mariage*, Paris, F. Alcan, 1893, pp. 167.
- S. Fragapane, *Contrattualismo e Sociologia Contemporanea*, Bologna, Ditta Nicola Zanichelli, 1892, pp. 247.
- G. Cimbali, *Le Scienze Morali e Politiche*, Napoli-Roma-Torino, Roux e Co., 1893, pp. 86.
- F. de Sarlo, *Il Fattore della Motilità*, Roma, Tipograf. della R. Accademia dei Lincei, 1893, pp. 81.
- G. Cesca, *La Relione della Morale*, Padova, Libreria all' Università, Verona, Libreria alla Minerva, 1893, pp. 102.

## IX.—PHILOSOPHICAL PERIODICALS.

THE PHILOSOPHICAL REVIEW.—No. 10. J. M. Baldwin—Internal Speech and Song. ["All pitch reproduction is auditive. Pitch recognition (absolute) is due to association between the motor ingredients of pitch qualities and the motor elements of the attention. Verbal reproduction is of several types—motor, visual, auditory, &c. Verbal recognition is due to association of the motor elements of that memory-image which most readily stimulates attention with the motor elements of the attention." "The existence of memory types is due to the education of the attention under the operation of the 'law of sensory-motor association'; the motor ingredients of a particular kind of memories become in this way implicated by association with the motor elements of the attention." We desiderate an exact explanation of the meaning of "motor element": is it the memory-image of motor sensations, or is it an inchoate movement? If it is both, which is essential? We desiderate also a detailed and accurate account for each special case of the distinction between the motor ingredients of the memory-image and the motor ingredients of attention to this image. The most interesting part of the paper is the discussion of absolute pitch recognition. The argument against Von Kries does not, however, appear to be at all conclusive. The explanation of the influence due to timbre given by Baldwin is easily reconcilable with the general *Benennungs association* theory as distinguished from Baldwin's special modification of it.] Dickinson S. Miller. [Whatever we think of falls within our subjective consciousness. Marked ingenuity and subtlety are shown in working out this ancient thesis, and defending it against objections. But Mr. Miller has set himself an impossible task.] E. Adickes.—Bibliography of writings by and on Kant which have appeared in Germany up to the end of 1887. Pt. ii.: Writings on Kant, No. 160 et seq.

REVUE DE METAPHYSIQUE ET DE MORALE.—M. A. Bertrand—Correspondance entre Maine de Biran et André-Marie Ampère. Sully Prudhomme—Sur l'origine de la vie terrestre. C. Riquier—De l'idée de nombre considérée comme fondement des sciences mathématiques.

REVUE PHILOSOPHIQUE.—18<sup>me</sup> Année, No. 7. July, 1893. V. Egger—Jugement et ressemblance. [A judgment consists of two terms plus a something which keeps them distinct. Its origin must be sought therefore, not in the absolute unity of the concept, but in association by resemblance, which affords two terms at once united and distinct. The connecting link, which in the association is implicit and obscure, is in the judgment explicit and clear. Identity is given in association by resemblance, and only the mental operation of abstraction is required to disentangle it and make it evident. Hence the principle of identity is sufficiently accounted for by the ordinary mental functions and without recourse to the *a priori*. Association by contiguity is not reducible to association by resemblance, but it is from the latter alone that judgment is derived. Among modern philosophers who have treated of the judgment, Condillac only has come near to the true explanation.] J. Soury—Origine et nature du mouvement organique. [A purely physiological paper.] G. Mouret—Le problème de l'infini. I. Relativité. [An endeavour to "elucidate, from an objective point of view, the signification of that kind of quantity called infinite quantity, which mathematicians have represented by the symbol  $\infty$ ". The concept of the infinite and

that of its counterpart zero implies four essential properties: "The infinite and the zero are (1) the contraries of the finite, (2) negative concepts, opposed to the finite—a positive concept, (3) unities, opposed to the indefinite multiplicity of the finite, (4) the limits of the finite". These properties, as pertaining to 'zero,' are established and illustrated by an analysis of the notion of mass, or quantity of matter.] Notes et Discussions. M. Mauxion—Quelques mots sur le nativisme et l'empirisme. [Calls attention to the persistence of visual images as an important factor in the perception of space.] E. Joyau—De l'introduction en France de la philosophie de Kant. Notices Bibliographiques, &c. No. 8. August. A. Penjon—Le rire et la liberté. [The essence of the pleasant and laughable in all its forms is spontaneity, or liberty,—and "laughter is only the expression of our own feeling of liberty, or of our sympathy for certain manifestations, real or imaginary, of liberty in others; always and everywhere it is as the natural echo in us of liberty". With this as guiding principle, the several conditions and causes of laughter are examined.] C. Mouret—Le problème de l'infini. I. La relativité (Fin.). [Continues the analysis of the notion of mass, exhibiting the properties of the infinite, as in previous number of the 'zero'. Both infinite and zero are derived from the "notion-mère," the 'not-finite,' which is the contrary of the finite. Both imply the absence of a certain change, the presence of which is the characteristic of the finite. "The infinite is not absolute but relative, is the position of a term in a system of relations"—"expresses directly or indirectly a certain simple relation of its determined object with other determined objects".] V. Egger—Jugement et ressemblance (Fin.). [Criticism of Mill's theory of judgment.] Notes et Discussions, &c.

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE.—Bd. v., Heft 3 und 4. H. Ebbinghaus—Theorie des Farbensehens. [There are concerned in *normal colour vision* three sensitive substances, situated in the most external retinal layers, and differing in distribution, power of absorption, and decomposability. (1) The *white substance*. Throughout the retina. Most sensitive. Perpetually decomposed (sensations of white and grey) and regenerated. (2) The *visual purple*; decomposed into visual yellow; further decomposed by the green-to-violet rays. Exists in a reddish and rose-violet form. In the external members of the rods and cones. Final decomposition—products used for regeneration. Decomposition of purple and yellow = sensation of brightness, *plus* a 'toning' of yellow and blue. The 'rhythms' of the latter colours are antagonistic. (3) The *red-green substance*. In the external members of the cones. More decomposable than the visual purple. Originally green (complementary to purple; therefore these cone-members colourless; decomposed to red; further by middle wavelengths: final products regenerated to green. Decomposition of green and red = sensation of brightness, *plus* a 'toning' of red and green; again, antagonistic 'rhythms'. *Abnormal colour vision*. Ordinary colour-blindness = absence of (3). 'Red' and 'green' blindness are due to the presence of one or other form of (2). 'Colour weakness' and irregularities of colour antagonism are to be explained centrally, by disturbances of the 'rhythm'-excitations. Total colour-blindness means either absence of (2) and (3); or central disturbances. The paper occupies 90 pages.] P. Hocheisen—Ueber den Muskelsinn bei Blinden. [The perception of passive movements—the perceptions of the 'muscle-sense' in general (p. 239)—are more than normally acute in the case of practised blind subjects. The causes of this are mental: attention and practice in the interpretation of sensations of slight intensity. The movement-sensibility

of children is better than that of adults. The differences of 'right' and 'left' have but little to do with acuteness of movement-discrimination. The cutaneous 'sense of place' is not always provably more than normally acute in the blind: where it is so, the fact is referable to practice.] *Litteraturbericht*. Bd. v., Heft 5. R. Sommer—Zur Theorie der cerebralen Schreib- und Lesestörungen. [Cf. the writer's *Zur Psychologie der Sprache*, *Zeitscher.*, vol. ii. pp. 143 ff. (1) Partial letter-alexia after the appearance of an apoplectic area in the left hemisphere. (2) Some letters are read, some never read, some occasionally. Cf. dyslexia. (3) Reading is not the result of the cognition of letters *plus* the remembrance of their sounds. But there is no 'centre' for the junction of letters. Perhaps we normally think the letter-sounds in such rapid succession that they fuse to form a word. (4) In cases of partial alexia it does not follow that letters read can be written down when called out to the patients. On the other hand, letters can be written from dictation which cannot be read.] E. Brodhun—Die Gültigkeit des Newtonschen Farbenmischungsgesetzes bei dem sog. grünblinden Farbensystem. [The experiments referred to by A. König, *Sitzungsber d. Berl. Akad.*, March 31, 1887. The writer's colour-system showed considerable deviations from Newton's law. Tentative determination of these.] *Litteraturbericht*. [Kölpe on Cornelius' *Verschmelzung und Analyse*.]

PHILOSOPHISCHE STUDIEN.—Bd. ix., Heft 1. H. Bruns—Ueber die Ausgleichung statistischer Zählungen in der Psychophysik. [A valuable paper, suggested by Kämpfe's recent work on Right and Wrong Cases: too technical for summarisation.] J. Merkel—Die Methode der mittleren Fehler, experimentell begründet durch Versuche aus dem Gebiete des Raummasses I. [Continuation of previous articles; vii. 558, viii. 97. Theory of the method.] A. Lehmann—Ueber die Beziehung zwischen Athmung und Aufmerksamkeit. [(i.) *Introduction*. Lange, Münsterberg, &c. Criticism of Eckener. (ii.) *Apparatus*. Light, sound, and electricity employed. (iii.) *Results*. Causes of fluctuation are breathing, quivering of the muscles of accommodation, the memory-image of the sensations (interferes with the others; hence irregularity of fluctuation) and various special conditions. (iv.) *Theoretical remarks*. "These facts can tell us nothing of the nature of attention, except, what no one disputes, that 'attention' is dependent on organic processes." Preferable to the author is a theory of attention which does without 'apperceptive activity,' and which accords with Wundt's theory of hypnosis (viii. pp. 42 ff.)] L. Witmer—Zur experimentellen Ästhetik einfacher räumlicher Formverhältnisse. I. [(i.) *Introduction*. Hogarth to Zeising. (ii.) *Zeising's doctrine of proportion*. The golden section. Value of Zeising's work. (iii.) *Fechner's experimental Aesthetics*. (iv.) *Some hitherto unpublished investigations by Fechner*. Two series of experiments, with ellipses and i's. (v.) *Fechner's methods and measurements*. (vi.) *A new method of choosing*.] *Tafel des integrals  $\phi$  ( $\gamma$ ), &c.*, Zusammengestellt von B. Kämpfe. [Cf. viii. 511, and ix. 1.]

PHILOSOPHISCHE MONATSHEFTE.—Bd. xxix., Heft 5, 6. Paul Carus—Die Religion der Wissenschaft. Eine Skizze aus dem philosophischen Leben Nordamerikas. [An account of the aim and principles of the 'Open Court' Publishing Company.] R. Haar—Ein unaufgeklärtes Moment in der Kantischen Philosophie. [A critical examination of the Lectures on Psychology recently edited and attributed to Kant by Carl du Prel, and of the larger 'Lectures on Metaphysics' published in 1821 by V. H. Ludwig Pölit, and a refutation of the charge of mysticism founded upon them. The writer shows, from internal and other evi-



dence, the improbability of the supposed authorship, and quotes Kant's contemporaries, Schultze, Borowsky, Jachmann, to prove Kant's complete freedom from 'mysticism'.] V. Tönnies—*Werke zur Philosophie der Geschichte und des socialen Lebens* (Vierter Artikel, Gabriel Tarde, *Les Lois de l'imitation*). [A closer definition and limitation of the term imitation demanded. Many phenomena brought under imitation fall rather under the law of 'like conditions, like results'.] Recensionen, &c.

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE.—Th. Achelis—Die philosophische Bedenlung der Ethnologie. [Emphasises the importance of Ethnological data in Psychology, Theory of Knowledge, and Ethics; but no fresh light is thrown on the subject.] Fr. Hitschmann—Der Blinde und die Kunst. [An interesting paper dealing mainly with the appreciation shown by the blind for poetry and especially for the drama. Their remarkable sense of rhythm is noted.] Chr. Ehrenfels—Werththeorie und Ethik. [Individual is distinguished from social ethics. For the individual as such ethical value belongs to what furthers sentiments of mystical peace and confidence in face of death and evil. From the social point of view ethical value belongs to the mental conditions which determine voluntary action. The more fully morality is developed the more does ethical valuation attach to general dispositions of feeling and desire rather than to particular intentions, purposes, or ends.] W. Schnappe—Die Bestätigung des naiven Realismus. Offener Brief au Herrn. Prof. Dr. Richard Avenarius.

ZEITSCHRIFT FÜR EXAKTE PHILOSOPHIE.—Bd. xx., Heft 1. W. Resl—Zur Psychologie der subjektiven Ueberzeugung. [Subjective conviction in contradistinction from objective, is "jenes Fürwahrhalten," which is accompanied by confidence in its own validity, although its objective grounds are inadequate. The present article investigates the genesis of subjective conviction. No less than fourteen "different kinds of causes and grounds" are enumerated. This article is well worth reading.] O. Flügel—Zur Psychologie und Entwicklungsgeschichte der Ameisen. [A criticism of the theory of natural selection.]

PHILOSOPHISCHES JAHRBUCH.—Bd. vi., Heft 3. J. Pohle Ueber die actualae Bestimmtheit des unendlich Kleinen (Schluss). C. Gutberlet—Fr. Paulsen's philosophisches System. C. Ludewig—Der Substanzbegriff bei Cartesius im Zusammenhang mit der scholastischen und neueren Philosophie. F. X. Kiefl—Gassendi's Skepticismus und seine Stellung zum Materialismus. III. Argumente gegen jedes transcendente Wissen und Vertheidigung der Skepsis. B. Adlhoeh—Herder und Geschichtsphilosophie.

RVISTA ITALIANA DI FILOSOFIA.—Anno viii., vol. i. May and June. C. Dandolo—La dottrina della Memoria in Cartesio, Malebranche and Spinoza. [Descartes explains memory physiologically, through the traces left in the brain by the animal spirits. His theory is physiologically inadequate as failing to recognise the complexity of the elements concerned in both sensation and representation, and is further inconsistent with his metaphysical dualism. Descartes tried to find a definite seat for the soul in the organism, but it cannot be admitted that he anticipated the modern science of physiological psychology, which seeks the laws of internal phenomena in the facts of the organism and in particular of the cerebral mechanism and which tends to monism instead of to dualism. Malebranche explains memory through the conjunction of our several perceptions with the changes in the fibres meeting in the chief

part of the brain, where is the seat of the soul. The oftener a change is repeated, the greater the facility and tendency to repeat it and hence to reproduce the impression. Malebranche's psychology is superior to Descartes' inasmuch as it recognises association, but he fails not only to explain memory but even to account for the distinction between the image and the sensation, the traces left by either being qualitatively identical. The metaphysical difficulty also recurs. In attempting to reconcile the Cartesian 'dissidio' between God and the world, Malebranche tends to identify human with divine thought, to make God think in us, and thus memory becomes a mere imperfection, since to the divine thought past and future are as an eternal present. In *Spinoza's* theory, the remembrance is the sensation plus the thought that it is sensation in time past, of a given duration. This introduction of the temporal element is a decided step in advance, but in the difficulties of combining in memory *sensation*, which is merely phenomenal, with the essentially opposed *intellect*, which intuits things *sub specie eternitatis*, we have a repetition of the metaphysical and logical difficulties of Descartes and Malebranche.] C. Mantovani—La psicologia come scienza sperimentale. [Answers the objections to the claims of psychology to be considered a science, and concludes that "psychology, as a science, is concerned primarily with facts, and accepts hypotheses only in so far as they serve to connect those facts, renouncing, in common with every other positive science, all pretensions to explanations which transcend its limits to enter the region of metaphysical explanation". Thus while facts oblige the recognition of a *psycho-physical parallelism*, psychology can affirm nothing as to the essential nature of the relation between the two orders of phenomena.] A. Valdarnini—Un nuovo trattato di Filosofia della Natura. [An account of the Hegelian philosopher Pietro Ceretti, d'Intra (1823-84) and his *Essologia*.] N. R. D'Alfonso—Spetto dell' Amleto (Note Psicologiche). Bibliographia. E. Dillmann (L. Credaro)—Discussions, &c. July and August. A. Faggi—Saggio sul misticismo. [An account and criticism of Osvaldo Zimmermann's mystical treatise 'Die Wonne des Leids' and of similar doctrines. Zimmermann's treatise is based on the psychological theory that the difference between pleasures and pains is purely intensive and not qualitative, and assumes (1) the essential identity of the pleasure and the pain in all feelings, and (2) the essential equivalence of the sensible and the spiritual. The 'voluptuousness of pain' is then a fusion of sensible and intellectual, of pleasurable and painful elements. In its essence this is a metaphysical doctrine "revealing the eternal identity beneath the fleeting variety of the world of phenomena". Anticipated by the ancients, its true author is Schopenhauer, whose influence upon Wagner is an instance of the influence mysticism exerts in literature and art. Though expressing an eternal need of the human spirit, mysticism "can never acquire a footing in the domain of science".] C. Marchesini—Il Dinamismo psicologico. [A study of psychical activity as at once analytic and synthetic, the basis of the co-ordination of external phenomena (natural science) and of the co-ordination of states of consciousness (psychology).] V. Bernini—Il Grazioso. Bibliographia. Il piacere e il dolore secondo Münsterberg (F. de Garlo), &c.

## X.—NOTES.

### THE LATE G. C. ROBERTSON'S ORAL TEACHING.

In Miss Foley's interesting paper on "George Croom Robertson as a Teacher" (*MIND*, N.S., No. 5, pp. 275-280) it was suggested that an attempt might be made to reproduce the substance of his oral teaching in a connected form. We are happy to say that a serious effort to carry out this suggestion is now being made. The object of the present note is to invite old pupils who have in their possession written records of Prof. Robertson's lectures to aid the undertaking by sending their notes to Miss C. Foley, 53 Russell Square, London.

### MR. H. LAURIE'S EMENDATION OF MILL'S CANONS OF INDUCTION.

Prof. Fowler has drawn our attention to the fact that the modified statement of Mill's Method of Agreement proposed in Mr. H. Laurie's article on "Methods of Inductive Inquiry," which appeared in the last number of *MIND*, has been largely anticipated in his own *Inductive Logic*. Mill's canon runs thus: "If two or more instances of the phenomenon under investigation have only one circumstance in common, the circumstance in which alone all the instances agree is the cause (or effect) of the given phenomenon". Mr. Laurie's proposed modification is as follows: "When within our experience a given antecedent has always been followed by a given consequent, or when phenomena have always been found accompanying each other, there is a probability that the given antecedent and consequent, or the concomitant phenomena, are connected by a law of causation; and the probability increases with the number and variety of the instances". Prof. Fowler's amended canon runs thus: "If two or more instances of the phenomenon under investigation have only one other circumstance in common, that circumstance may be regarded with more or less of probability as the cause (or effect) of the given phenomenon, or, at least, as connected with it through some fact of causation". The canon, as thus stated, emphasises the fact that the Method of Agreement can only give varying degrees of probability (and the subsequent exposition makes it plain that this probability will depend on "the number and variety of the instances"), that it "embraces concomitant as well as sequent phenomena," and that it may, in fact, be applied to establish a presumption as to any kind of causal connexion.

### THE PREFACE TO VOL. II. OF MR. H. SPENCER'S "ETHICS".

Several criticisms having shown that the preface to vol. ii. of *The Principles of Ethics* is seriously misleading, Mr. Spencer has decided to recast it. The following will be substituted in all copies hereafter issued:—

"Now that, by this issue of parts v. and vi., along with part iv. previously published, I have succeeded in completing the second volume of *The Principles of Ethics*, which some years since I despaired of doing, my satisfaction is dashed by the thought that these new parts are less definite in their conclusions than I had hoped to make them. Complete definiteness was of course not to be expected. Right regulation of the actions of so complex a being as Man, living under conditions so complex as those presented by a society, evidently forms a subject-matter unlikely to admit of specific statements throughout its entire range.

"The primary division of it—private conduct—necessarily dependent in part on the nature of the individual and his circumstances, can be prescribed but approximately; and guidance must, in most cases, be obtained by a judicial balancing of requirements and avoidance of extremes. Entrance on the first great division of public conduct—Justice—does, indeed, introduce us to conclusions which are in large degree definite. Happily, into this most important portion of Ethics, treating of certain right relations between individuals, irrespective of their natures or circumstances, there enters the ruling conception of equity or equalness—there is introduced the idea of *measure*; and the inferences reached acquire a certain quantitative character which partially assimilates them to those of exact science. But when, leaving this all-important division, the injunctions of which are peremptory, and take no cognisance of personal elements, we pass into the remaining divisions—Negative and Positive Beneficence—we enter a region in which the complexities of private conduct are involved with the complexities of relations to the no less complex conduct of those around; presenting problems for the solution of which we have nothing in the nature of measure to guide us, and must commonly be led by empirical judgments.

"In view of these admissions some will contend that no aid is here furnished by the general Doctrine of Evolution. The first reply is that, in that chief division of Ethics treating of Justice, it furnishes aid both as verifying conclusions empirically drawn, and as leading to certain unaccepted conclusions of importance. If it be said that throughout the divisions of Ethics dealing with Beneficence, Negative and Positive, the conclusions must, as above implied, be chiefly empirical, and that therefore here, at any rate, the Doctrine of Evolution does not help us, the reply is that it helps us in general ways though not in special ways. In the first place, for certain modes of conduct which at present are supposed to have no sanction if they have not a supernatural sanction, it yields us a natural sanction—shows us that such modes of conduct fall within the lines of evolving humanity—are conducive to a higher life, and are for this reason obligatory. And, in the second place, where it leaves us to form empirical judgments, it brings into view those general truths by which our empirical judgments should be guided—indicates the limits within which they must fall.

"Beyond serving to reinforce the injunctions of Beneficence by adding to the empirical sanction a rational sanction, the contents of parts v. and vi. have these claims to attention: First, that under each head there are definitely set down the various requirements and restraints which should be taken into account: so aiding the formation of balanced judgments. Second, that by this methodic treatment there is given a certain coherence to the confused and often inconsistent ideas on the subject of Beneficence, which are at present lying all abroad. And third, that the coherent body of doctrine which results is made to include regulation of sundry kinds of conduct which are not taken cognisance of by Ethics as ordinarily conceived."

#### NEWS.

Professor Adamson has been appointed to the Chair of Logic and Psychology in the University of Aberdeen, vacated by the death of Professor Minto. Mr. Alexander, of Lincoln College, Oxford, has succeeded Professor Adamson in the Chair of Logic and Philosophy in Owens College, Manchester.

